National Aeronautics and Space Administration

**George C. Marshall Space Flight Center**
Marshall Space Flight Center, AL 35812

May 21, 2018

AS01

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Re: NASA Final Soil Treatability Studies Summary

The National Aeronautics and Space Administration (NASA) received the California Department of Toxic Substances Control (DTSC) comment letter dated May 2, 2018, concurring with the results of NASA's Draft Soil Treatability Studies Summary Report and concluding that additional studies are not required to finalize the report. In accordance with Section 2.6 of the 2010 Administrative Order on Consent, NASA is submitting the Soil Treatability Studies Summary Report for your files.

> *I certify that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete.*

If you have any questions regarding this, please contact me at 256-424-5308.

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Enclosure

cc:
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*Final*

# Soil Treatability Studies Summary

Prepared for

National Aeronautics and Space Administration
Santa Susana Field Laboratory
Ventura County, California

May 2018

# Professional Engineer's Certification

I certify that this document was prepared by me or under my direct control and personal supervision, based on knowledge and information in general accordance with commonly accepted standards of practice. This certification is not a guaranty or warranty, either expressed or implied.

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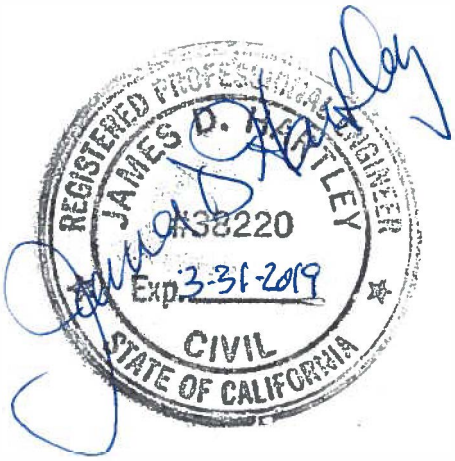

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# Acronyms and Abbreviations

| | |
|---|---|
| °C | degrees Celsius |
| °F | degrees Fahrenheit |
| µg/kg | microgram(s) per kilogram |
| ABFF | Alfa/Bravo Fuel Farm |
| AIP | Agreement in Principle |
| AOC | Administrative Order on Consent |
| AST | aboveground storage tank |
| BaP TEQ | enzo(a)pyrene toxic equivalence quotient |
| bgs | below ground surface |
| Boeing | The Boeing Company |
| BV | bioventing |
| CDFF | Coca/Delta Fuel Farm |
| cm | centimeter(s) |
| COC | contaminant of concern |
| CSM | conceptual site model |
| DIOXTEQ | dioxin toxic equivalency |
| DMS | dense media separator |
| DOE | U.S. Department of Energy |
| DPT | direct-push technology |
| DS | desktop study |
| DTSC | State of California Department of Toxic Substances Control |
| EFH | extractable fuel hydrocarbons |
| EPA | U.S. Environmental Protection Agency |
| ESAAP | Environmentally Sensitive Area Action Plan |
| FSP-1 | Field Sampling Plan 1 |
| FSP-3 | Field Sampling Plan 3 |
| FSP-6 | Field Sampling Plan 6 |
| $ft^2$ | square foot (feet) |
| g/L | gram(s) per liter |
| gpm | gallon(s) per minute |
| GRO | gasoline range organic |
| Hazen | Hazen Research, Inc. |
| HDPE | high-density polyethylene |
| ISCO | in situ chemical oxidation |
| kg | kilogram(s) |
| LUT | Look-Up Table |
| m | meter(s) |
| $m^3$ | cubic meter(s) |
| mg/kg | milligram(s) per kilogram |
| MS/MSD | matrix spike/matrix spike duplicate |
| mV | millivolt(s) |
| NASA | National Aeronautics and Space Administration |
| ORC | oxygen-releasing compound |
| PAH | polycyclic aromatic hydrocarbon |
| PAHTEQPAH | toxic equivalency |
| PCB | polychlorinated biphenyl |
| PERF | Petroleum Environmental Research Forum |
| pg/g | picogram(s) per gram |
| PID | photoionization detector |
| ppm | part(s) per million |
| PS | pilot study |

| | |
|---|---|
| QAPP | Quality Assurance Project Plan |
| RBSL | risk-based screening level |
| RL | reporting limit |
| RP-1 | Rocket Propellant 1 |
| RSL | regional screening level |
| RWQCB | Regional Water Quality Control Board |
| scfm | standard cubic feet per minute |
| SOD | soil oxygen demand |
| SRAM | standardized risk assessment methodology |
| SSFL | Santa Susana Field Laboratory |
| SVOC | semivolatile organic compound |
| SVP | soil vapor probe |
| SWMU | solid waste management unit |
| TOC | total organic carbon |
| TPH | total petroleum hydrocarbons |
| TS | treatability study |
| TTZ | target treatment zone |
| VOC | volatile organic compound |
| WDR | Waste Discharge Requirements |
| $yd^3$ | cubic yard(s) |

SECTION 1

# Introduction

The National Aeronautics and Space Administration (NASA) evaluated the applicability of various treatment technologies for the soil matrix at the Santa Susana Field Laboratory (SSFL) in Ventura County, California. This Soil Treatability Studies Summary presents the activities of the desktop study (DS), the bench scale treatability study (TS), and the field scale pilot study (PS) conducted at SSFL. The DS, TS, and PS efforts were focused on the potential of selected remedial technologies to treat a variety of soil contaminants that are present at SSFL.

## 1.1 Purpose of Report

The purpose of this report is to document the methodologies and outcomes of the DS, TS, and PS studies. For the DS, this report presents and describes technical case studies to evaluate the effectiveness and implementability of landfarming at SSFL; for the TS, this report presents the methodologies and results of bench scale testing for soil washing and thermal desorption; and for the PS, this report presents the field work, laboratory analyses, and results of data evaluation of field-scale bioventing and in situ chemical oxidation (ISCO) treatment.

In total, there are six technologies discussed in this summary:

- Landfarming
- Soil washing
- Thermal desorption
- Bioventing with oxidation
- ISCO
- Soil vapor extraction (SVE)

## 1.2 Regulatory Framework

The work was defined by State of California Department of Toxic Substances Control (DTSC)-approved work plans and conducted in accordance with DTSC Administrative Order on Consent (AOC) for Remedial Action, dated December 2010 (DTSC, 2010), and other applicable guidance. To demonstrate the ability to achieve the cleanup levels specified in the AOC, DS, TS and PS efforts are required, as specified in the AOC, to evaluate the implementability and effectiveness of a specific technology for remediating target contaminants of concern (COCs).

Given the practical constraints and suitability of localized testing of each of the selected candidate technologies, NASA conducted these evaluations based on previous studies, bench scale laboratory testing, and field scale pilot testing, to satisfy the treatability testing requirements specified by the DTSC in the AOC.

## 1.3 Facility Location and Description

SSFL is located approximately 29 miles northwest of downtown Los Angeles, California, in the southeast corner of Ventura County (Figure 1-1). SSFL occupies approximately 2,850 acres of hilly terrain, with approximately 1,100 feet of topographic relief near the crest of the Simi Hills. The site is divided into four administrative areas (Areas I, II, III, and IV) and includes undeveloped land both to the north and south. Most of Area I and all of Areas III and IV are owned by The Boeing Company (Boeing). Ninety acres of Area IV were leased to the U.S. Department of Energy (DOE), who also owns facilities in Area IV. The northern and southern undeveloped lands of SSFL were not used for industrial activities and are owned by Boeing.

Area II is owned by the federal government; NASA administers both Area II and a portion of Area I (Figure 1-2). The primary site activities at the NASA-administered areas of SSFL have included research, development, and testing of liquid-fueled rocket engines and associated components (pumps, valves, and similar) (MWH, 2009).

## 1.4 Report Organization

The DS of landfarming consisted of a study of case histories and literature to establish the applicability of this technology for the contaminants and soil at SSFL. The DS is presented in three sections:

- Section 2 describes the technology and typical application of landfarming.
- Section 3 presents representative case histories.
- Section 4 presents a discussion specific to SSFL on siting considerations.

The bench scale TS consisted of two components, soil washing and thermal desorption, and is presented in three sections:

- Section 5 summarizes the bench scale TS sites, contaminants, treatment technologies, and previous soil investigations.
- Section 6 describes the rationale and performance goals for the bench scale TS efforts; provides an overview of the procedures, sampling, and analyses activities; and lists the deviations from the project work plan in carrying out the bench scale tests.
- Section 7 interprets the overall performance results of the bench scale TS efforts and discusses those results relative to the performance goals.

The field scale PS consisted of bioventing at two sites, followed by infiltration of an oxidizing solution at one of these sites in the Bravo Area. The PS is presented in four sections:

- Section 8 summarizes the field scale PS sites, contaminants, treatment technologies, and previous soil investigations.
- Section 9 describes the implementation of the field scale PS efforts; provides an overview of the experimental designs, procedures, and planned sampling and analysis activities; and lists the deviations from the project work plan in carrying out the field scale tests.
- Section 10 presents the PS evaluation results for field scale bioventing, the metrics involved, and a comparison to screening criteria.
- Section 11 presents the PS evaluation results for ISCO and the combined results for both bioventing and ISCO, the metrics involved, and a comparison to screening criteria.

Following these descriptions of the DS, TS, and PS efforts, Section 12 presents the combined conclusions of the studies in summary form. Section 13 lists the references for the studies and this report.

The appendixes include the following:

- Appendix A contains the Hazen report for soil washing, with photographic logs for the soil washing bench scale test.
- Appendix B contains the Hazen report for thermal desorption, with photographic logs for the thermal desorption bench scale test.
- Appendix C contains analytical data for each TS effort.
- Appendix D contains the Bravo Test Stand bioventing results.
- Appendix E contains bioventing data and evaluation.
- Appendix F contains cultural resource compliance and biological survey documentation.
- Appendix G contains ISCO infiltration data and evaluation.
- Appendix H contains combined bioventing and ISCO data.

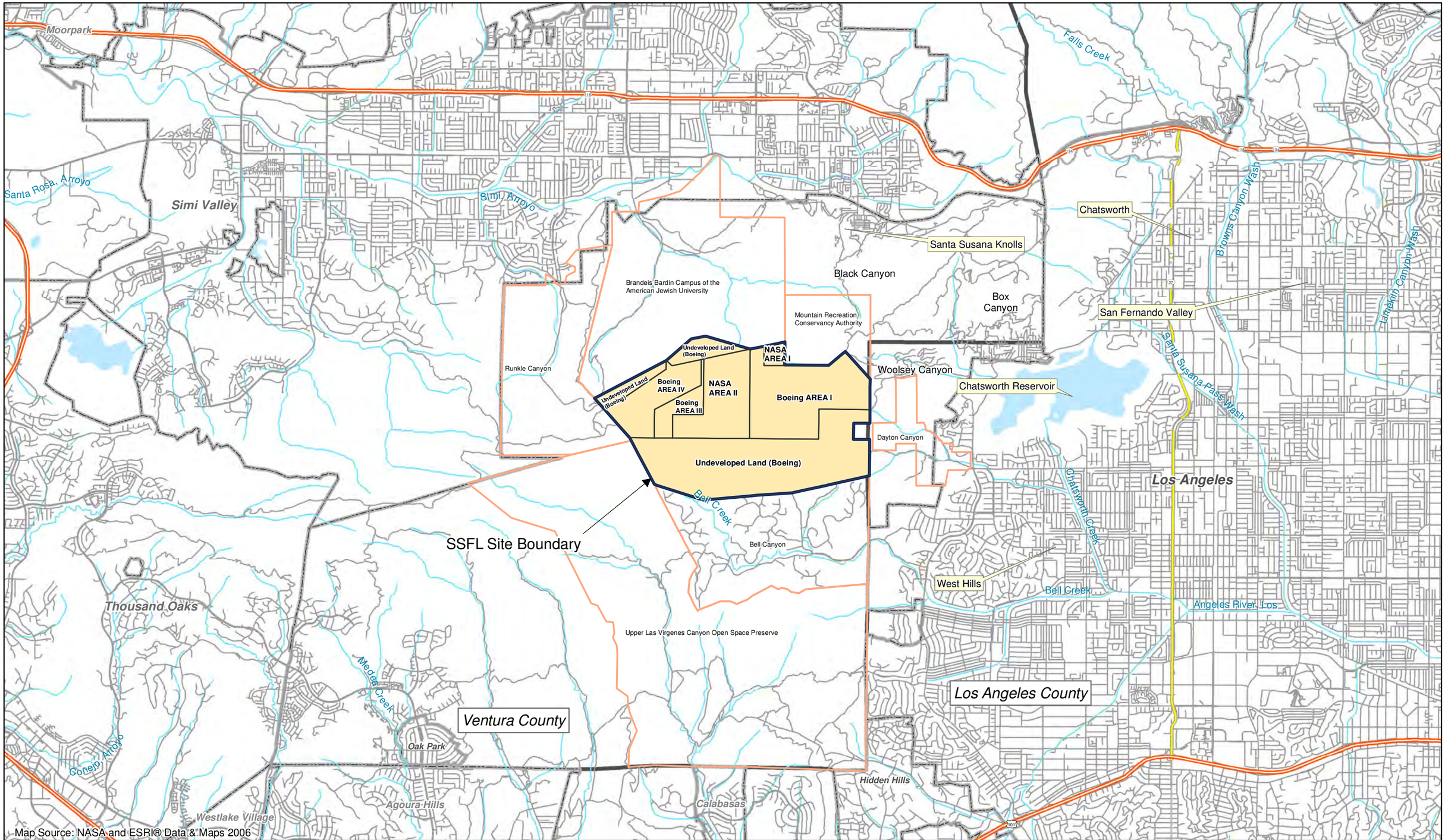


Figure 1-1
Facility Location Map
Soil Treatability Studies Summary
NASA SSFL, Ventura County, California

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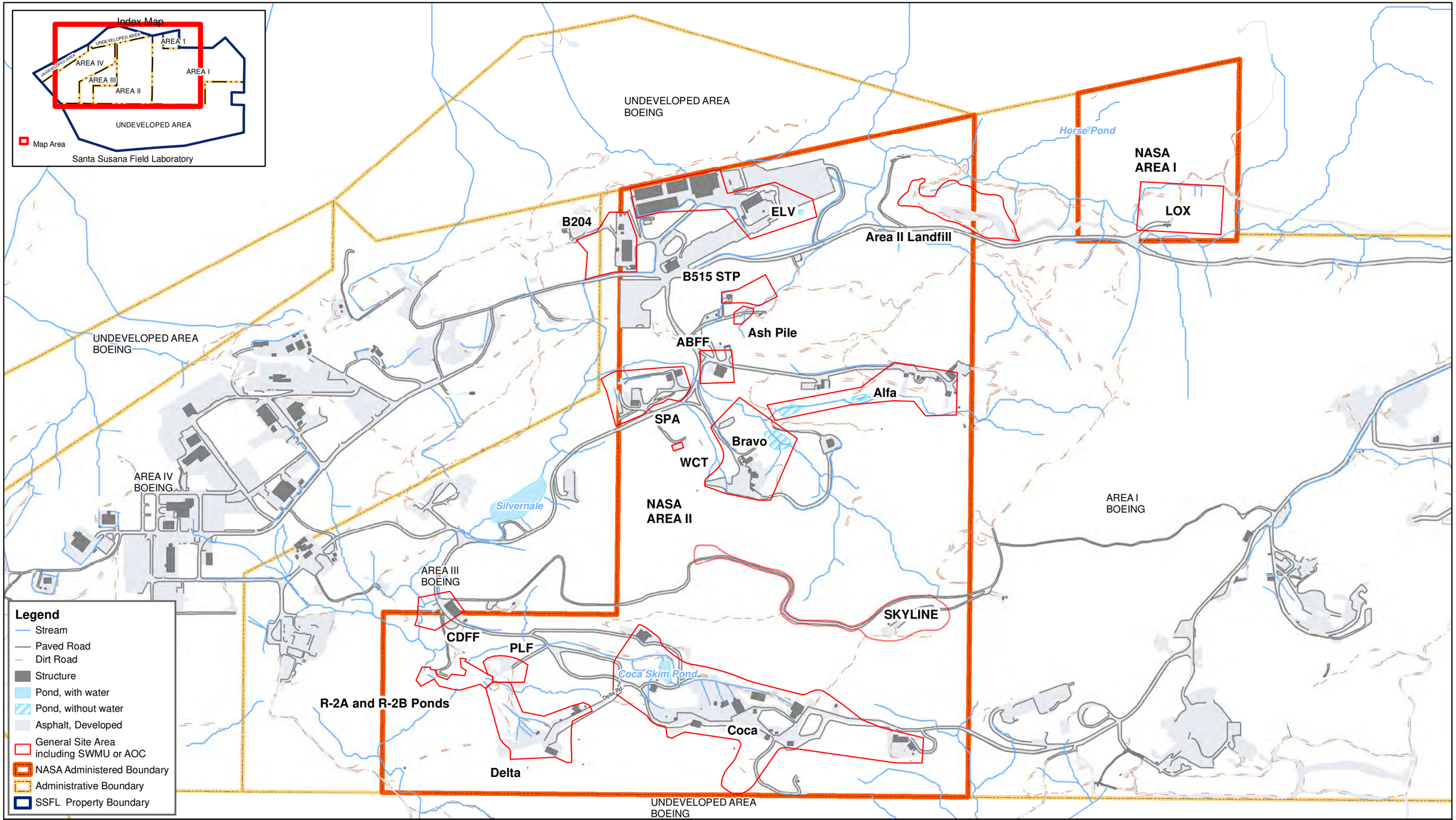


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Drawn By:
A. Cooley

**Figure 1-2**
**NASA-Administered Areas**
**Soil Treatability Studies Summary**
**NASA SSFL, Ventura County, CA**

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SECTION 2

# Landfarming

This section presents the DS of landfarming as a soil treatment technology.

Soil sampling at SSFL for all parameter classes shows that total petroleum hydrocarbons (TPH) are widely found at the site. Much of the area has TPH exceedances that are beyond the LUT values, which is why TPH is one of the key COCs in the NASA areas at SSFL. Landfarming at the site is of interest for NASA because it generally is a cost-effective and proven technology for TPH remediation.

## 2.1 Description, Advantages and Disadvantages

Landfarming is an aboveground remediation technology for soil to reduce concentrations of petroleum constituents through biodegradation. The excavated soil is spread onto beds engineered to control the release of COCs beneath the treatment layer. The soil can be amended with nutrients to enhance biological activity. The amended soil periodically is irrigated and tilled to provide moisture and to aerate the soil. COC and nutrient concentrations, temperature, pH, and soil moisture are monitored.

Several advantages and disadvantages are associated with using landfarming, as summarized in Table 2-1 (U.S. Environmental Protection Agency [EPA], 2004).

TABLE 2-1
**Advantages and Disadvantages**
*Soil Treatability Soil Summary, SSFL, Ventura County, California*

| Landfarming Advantages | Landfarming Disadvantages |
|---|---|
| 1. Simple to design.<br>2. Treatment times: usually 6 months to 2 years under optimal conditions. Could be decades, however, if COCs are difficult to degrade or soil conditions are not adequate for microbial degradation.<br>3. Cost competitive: $30 to $60 per ton or less.<br>4. Effective on organic constituents with high or moderate biodegradation rates. | 1. Concentration reductions > 95 percent; constituent concentrations < 0.1 ppm are difficult to achieve.<br>2. May not be effective for high constituent concentrations (> 50,000 ppm TPH).<br>3. Presence of significant heavy metal concentrations (> 2,500 ppm may inhibit microbial growth).<br>4. Volatile constituents tend to evaporate rather than biodegrade.<br>5. Requires a large land area for treatment.<br>6. Requires water, with the specific requirements a function of the net evaporation rate.<br>7. May require bottom liner if leaching from landfarm is a concern.<br>8. Dust and vapor generation during landfarm aeration may be a concern. |

Notes:
COC = contaminant of concern
ppm = part(s) per million
TPH = total petroleum hydrocarbon

## 2.2 Landfarming Effectiveness

Effectiveness of landfarming depends on several parameters that can be subdivided into three main categories: soil characteristics, constituent characteristics, and climate conditions. Some of these characteristics—especially soil characteristics—can be modified to improve effectiveness. Table 2-2 summarizes information presented in EPA guidance documents (EPA, 2004) on how landfarming effectiveness is impacted with each of the soil, constituent characteristics, and climatic parameters.

Important questions around effective landfarming and bioremediation are answered in DOE/Petroleum Environmental Research Forum (PERF) document (DOE, 2003). The main questions, also answered throughout the various cases presented in Section 3, are related to the length of time required to lower TPH concentrations to acceptable levels, the need to follow up with a second technology to polish off residual TPH concentrations,

the site suitability to landfarming with regards to soil texture and water holding capacity, additives (water, nutrients, fertilizers and bulking agents), soil temperature, and tilling frequency.

TABLE 2-2
**Assessing Landfarming Effectiveness**
*Soil Treatability Soil Summary, SSFL, Ventura County, California*

| | |
|---|---|
| *Soil Characteristics* | |
| Soil pH | Effectiveness is best when pH ranges from 6 to 8 and soil amendments can be added to bring pH into this range. |
| Moisture Content | Effectiveness is best when water content is between 40 and 80 percent of field capacity. Outside this range, irrigation or drainage may be required. If drainage alone is not sufficient, a bulking agent can be helpful. |
| Soil Temperature | Effectiveness is best when soil temperature ranges from 10°C to 45°C as microbial activity is diminished outside that range. |
| Nutrient Concentrations | Effectiveness is best when Carbon: Nitrogen: Phosphorus ratio is in the range of 100:10:1 to 100:1:0.5 depending on the target constituents and microorganisms involved in the biodegradation. |
| Texture | Effectiveness is best when soil texture is medium to loose. Texture affects permeability and workability. It is important to consider as it impacts oxygen addition through tilling, nutrient distribution, and moisture content. Bulking agents, such as wood chips, can be added when soil has a high clay content. |
| *Constituent Characteristics* | |
| Volatility | Volatile compounds typically dissipate into the atmosphere rather than being biodegraded by bacteria. Control and capture of volatiles could be required depending on the concentration of volatile compounds in the soil. |
| Chemical Structure | Important in determining the rate at which biodegradation will occur. In general, the more complex the molecular structure of the constituent, the more difficult and less rapid is the biological treatment. These constituents are the rate limiting constituents in the biodegradation process. |
| Concentration and Toxicity | High concentrations of petroleum organics or heavy metals can be toxic or inhibit bacterial growth responsible for biodegradation.<br>If TPH range is greater than 50,000 ppm or heavy metals greater than 2,500 ppm, the contaminated soil should be mixed with clean soil to dilute the contaminated soil so average concentrations are below toxic levels. |
| Consider Cleanup Goals | Experience has shown that reductions of TPH concentration of 95 percent can be very difficult to achieve because of “recalcitrant” or non-degradable species that are detected in the TPH analysis. Threshold limit varies greatly depending on bioavailability of the hydrocarbons and the bacteria in the soil. Contaminant concentrations below 0.1 ppm are not achievable with biological treatment alone. |
| *Climatic Conditions* | |
| Ambient Temperature | Influences soil temperatures. If ambient temperatures are too low, consider heating, covering, or enclosing. |
| Rainfall | Rainfall run-on and runoff should be controlled using berms at the perimeter of the landfarm. A landfarm cover or a leachate treatment system may also need to be considered to prevent groundwater contamination. |
| Wind | Wind can cause soil erosion. Plowing soil into windrows and applying moisture can help reduce wind erosion. Wind can also cause soil to dry in zones of low relative humidity. |

Notes:
°C = degrees Celsius
ppm = part(s) per million
TPH = total petroleum hydrocarbon

# 2.3 Landfarm Design and Operation Evaluation

## 2.3.1 Landfarming Design

The landfarming design parameters listed in Table 2-3 are used to illustrate and develop land requirements, site layout, aeration equipment, and water management. System operations and monitoring plans would be developed under separate cover for the landfarming operation to ensure optimization of biodegradation rates through irrigation, tilling, fertilizer application, and oxidation addition, if warranted. Additional information on design can be found in EPA’s Alternative Cleanup Technologies Guide Chapter V: Landfarming (EPA, 2004).

TABLE 2-3
**Landfarm Design Parameters**
*Soil Treatability Soil Summary, SSFL, Ventura County, California*

| Design Parameters | Design Considerations |
|---|---|
| Land Requirements | Soil depths should be between 12 and 18 inches depending on the tilling equipment used. |
| Landfarm Layout | Define configuration, access, and number of plots. |
| Landfarm Construction | Site preparation, berms, liners, leachate collection, soil pretreatment, enclosures, and vapor treatment facilities. |
| Aeration Equipment | Several options available including rototillers, tractors with ripper teeth, and Brown Bear type of mixers. |
| Water Management | Use of berms and ditches to intercept and direct stormwater flow. Use of ponds with associated treatment if runoff flows are significant. |
| Soil Erosion Control | Consider erosion from wind or water. Generally, includes spraying to minimize dust, constructing water management systems, or terracing soil into windrows. |
| pH Adjustment and Nutrient Supply | Adjust through application of fertilizers, lime, and/or sulfur with soil amendments. Control of pH during the study is important. |
| Site Security | Important to deter public contact with contaminated materials with fencing. |
| Air Emissions Controls | Air emissions control may be necessary if volatiles are present in the landfarmed soil. Vapors above the landfarm should be monitored. |

## 2.3.2 Landfarm Layout

Landfarming layout is determined by the configuration of, and access to, the land available for the landfarm and the number of plots required. The contaminated treatable soil will be spread in lifts no greater than 18 inches. The site will require grubbing, clearing, and grading to minimize slopes, as landfarming requires fairly flat land on which to spread and remediate the COCs in the soil.

If a site requires multiple landfarming batches, an asphalt or concrete pad may be required. An impermeable layer such as a high-density polyethylene (HDPE) liner will also be used under the pad to prevent the migration of contaminants to groundwater. The liner will be installed sloping to a central area equipped with a drainage collection pipe network. A sump pump and temporary storage tank also will be included in the design to collect drain water to reuse for irrigation of the soil being treated.

## 2.3.3 Land Requirements

### 2.3.3.1 Treatable Soil Volumes

Soil was evaluated for implementation of a remedial technology to reduce TPH at or above 1,000 milligrams per kilogram (mg/kg), with monitored natural attenuation or a secondary remedial technology to further reduce TPH concentrations below 5 mg/kg. Figure 2-1 shows TPH exceedances above their respective LUT values of 5 mg/kg and above the active remedial goal of 1,000 mg/kg. Table 2-4 presents a summary of the quantitative volumes of soil requiring treatment.

Additionally, areas where there were no site operations or activities documented, including areas with undisturbed soil, were reviewed during the evaluation of soil for active remediation implementation; these areas are called nonoperational areas. The total volume of soil to be remediated was reduced by the volume of soil in Estimated Remediation Areas that overlap the nonoperational areas.

An estimated volume of approximately 12,961 cubic yards ($yd^3$) of treatable soil from all SSFL NASA sites could be excavated for remediation via landfarming. These volumes were calculated based on the maximum depth of contamination reported for the area exceeding the active remedial goal of 1,000 mg/kg and the estimated square footage of soil with TPH concentrations above active remedial goals.

TABLE 2-4

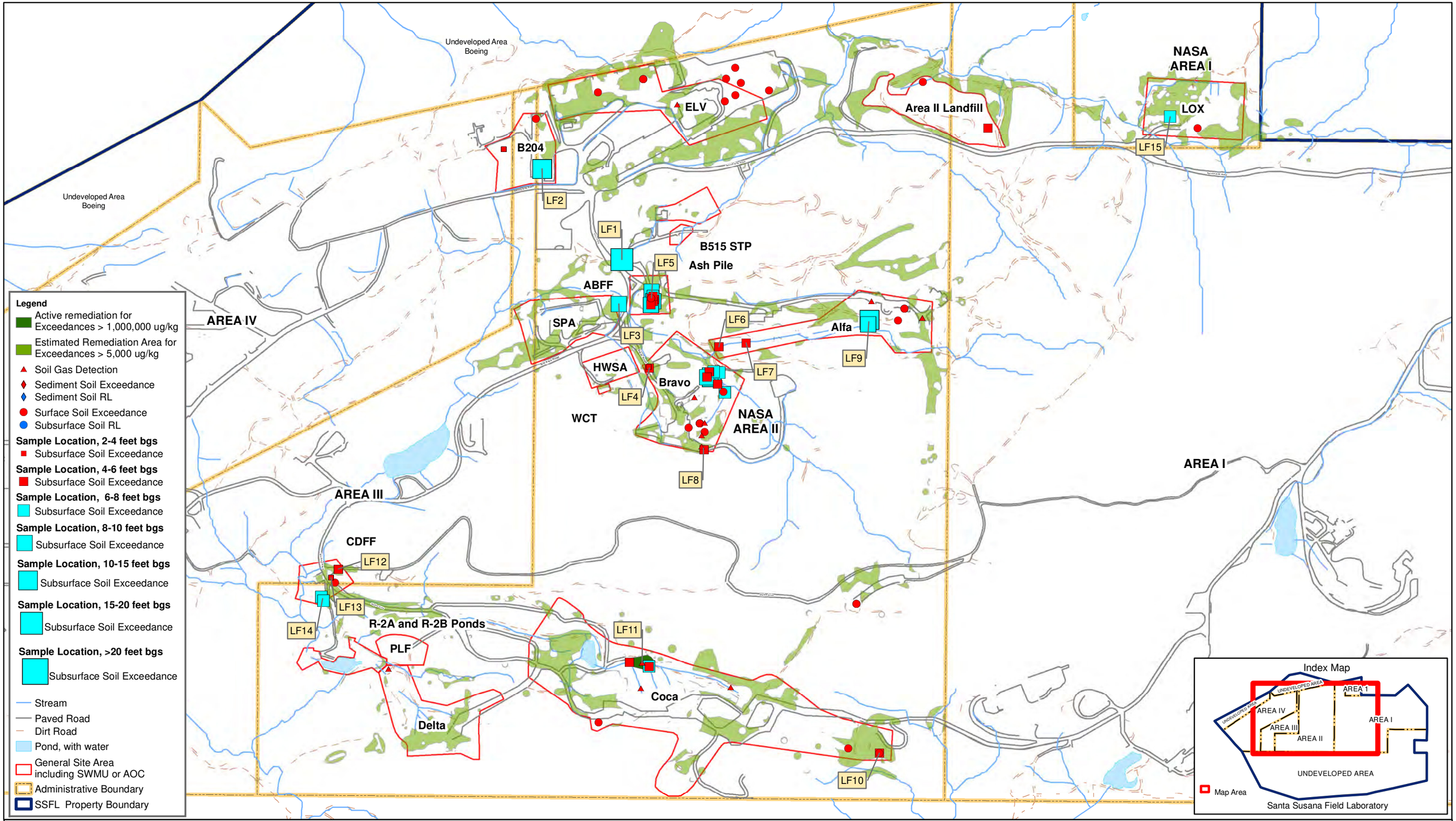
**Areas Available for Staging and TPH-Contaminated Areas Requiring Excavation at SSFL**

*Soil Treatability Soil Summary, SSFL, Ventura County, California*

| Site | TPH Contaminated Area Requiring Excavation ($ft^2$) | Average Maximum Depth of TPH LUT Exceedance (feet) | TPH-Contaminated Volume Requiring Excavation ($yd^3$) | Area Needed for Remediation [1] ($ft^2$) | (acres) |
|---|---|---|---|---|---|
| A2LF | - | - | - | - | - |
| ABFF | 6,093 | 11 | 2,535 | 141,425 | 3.25 |
| Alfa | 8,951 | 11 | 3,569 | 199,153 | 4.57 |
| AP/STP | - | - | - | - | - |
| B204 | 1,250 | 13 | 602 | 33,591 | 0.77 |
| Bravo | 2,501 | 5 | 463 | 25,839 | 0.59 |
| CDFF | 4,027 | 7 | 1,011 | 56,403 | 1.29 |
| Coca | 15,676 | 7 | 3,972 | 221,610 | 5.09 |
| Delta | - | - | - | - | - |
| ELV | - | - | - | - | - |
| LOX | 1,250 | 8 | 347 | 19,379 | 0.44 |
| PLF | - | - | - | - | - |
| R2PD | - | - | - | - | - |
| SPA | 1,250 | 10 | 463 | 25,839 | 0.59 |
| WCT | - | - | - | - | - |
| Total | | | 12,961 | 723,240 | 16.60 |

Notes:
[1]Assumes 18-inch lifts and 6.8-foot-wide rows and 3.3-foot spacing between lifts
$ft^2$ = square foot (feet)
TPH = total petroleum hydrocarbons
$yd^3$ = cubic yard(s)

A2LF = Area II Landfill
ABFF = Alfa/Bravo Fuel Farm
CDFF = Coca/Delta Fuel Farm
ELV = Expendable Launch Vehicle
LOX = Liquid Oxygen Plant
PLF = Propellant Load Facility
R2PD = R-2 Ponds
SPA = Storable Propellant Area
WCT = Waste Coolant Tank




N
W E
S

0 235 470 940 Feet

0 70 140 280 Meters

10-Nov-2015
Drawn By:
A. Cooley

**Figure 2-1**
**Targeted areas of TPH remediation**
**Review of Landfarming Effectiveness for TPH Remediation**
**Santa Susana Field Laboratory**
**Ventura County, California**

Map Document: O:\NASA\SSFL\maps\TreatabilityStudy\Landfarming_TPH\LF_TPHdata.mxd

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#### 2.3.3.2 Area Requirements

By assuming 18-inch-high and 6.8-foot-wide lifts, and spreading and dividing those volumes into lifts with typical design characteristics of 3.3 feet between lifts, it is estimated that 16.6 acres would be required to treat the 12,961 $yd^3$ of soil.

#### 2.3.3.3 Land Availability

It is estimated that approximately 3 acres of land will be available for landfarming across SSFL. Additional information about landfarming staging areas is presented in Section 4. If all excavated soil is transferred to all staging areas available within NASA-administered areas, 5.5 batches would be required across all areas at SSFL to process the entire volume of 12,961 $yd^3$.

## 2.4 Construction of Landfarming Treatment Cells

Areas to be used as landfarming staging areas are identified in Section 4. Hay bales (or other barriers) will be used to surround the entire treatment area and provide a physical barrier to prevent soil from migrating outside the treatment cells.

To control and prevent stormwater from leaving the landfarming treatment area, an HDPE liner will be placed on the ground surface. Hay bales also will be used with the liner to prevent sediment and stormwater from departing the site; water will be collected and reused in the landfarming process. The upgradient end of the treatment cell perimeter will be left open to allow truck traffic to enter and exit.

The contractor will establish and maintain the treatment area with a bulldozer and a disk harrow. The treatment area will be sized to contain the maximum amount of soil that can be treated, assuming 18-inch lifts that are 6.8 feet wide; however, based on the availability of equipment, higher lifts may be considered. If additional soil requires biological treatment, as directed by NASA, the treatment cell can be increased in size or contaminated soil can be staged for treatment when space within the treatment cell becomes available. Following the successful remedial treatment, the clean soil will be placed back into the excavations and used as backfill.

### 2.4.1 Water Management – Irrigation and Drainage

#### 2.4.1.1 Local Climate

In drier, warmer climates like at SSFL, water will be required to support proper microbial development and survival. The monthly mean temperature at SSFL ranges from 50 degrees Fahrenheit (°F) during the winter months to 70°F during the summer months. Between April and October, a landward wind pattern occurs because of the proximity of SSFL to the Pacific Ocean; during the winter months, this is interrupted by weather fronts (MWH, 2009). The average annual precipitation measured between 1960 and 2013 was 18.2 inches (MWH, 2014). During this period, annual precipitation ranged from a low of 5.7 inches in 2002 to a maximum of 41.24 inches in 1998. The majority of annual precipitation at SSFL and the surrounding area occurs between the months of November and March, consistent with the overall regional pattern in southern California (MWH, 2009). Based on data maps from the California Irrigation Management Information System, the annual reference evapotranspiration for the SSFL area is between 55.1 and 57.0 inches per year (http://wwwcimis.water.ca.gov/App_Themes/images/etozonemap.jpg).

#### 2.4.1.2 Irrigation

The addition of water will be required to support proper soil moisture for microbial growth. Moisture content needs to be between 40 and 80 percent of field holding capacity. Irrigation water will be provided to meet reference evapotranspiration for the SSFL area. Aboveground temporary piping or more permanent below ground piping systems may need to be designed and installed to reach the landfarming areas. Irrigation likely would need to be provided once or twice a week, depending on the time of the year.

#### 2.4.1.3 Drainage

Rainfall run-on and runoff will be controlled using berms at the perimeter of the landfarm. Stockpiled material must be contained and securely protected from wind and rain at all times unless the stockpile is actively being used. In accordance with the Stormwater Pollution Prevention Plan, the landfarms will be covered with a tarp or plastic when there is a 30 percent or greater chance of rainfall.

## 2.4.2 Equipment for Soil Aeration, pH Adjustment, and Nutrient Supply

### 2.4.2.1 Soil Aeration

Soil aeration through tilling is a key success factor for landfarming as it continues to provide aeration for soil microbes by mixing the soil. Several equipment options include standard agricultural equipment such as rototillers, field cultivators, tractors with ripper teeth, and Brown Bear equipment. The most favorable method is to use a disking device towed behind a tractor so that aerated soil is not tamped by the tractor tires.

### 2.4.2.2 pH Adjustments, Nutrient Amendments, and Temperature

When soil pH and soil nutrients are outside the optimal range for microbial growth, they can be adjusted and controlled during the study with soil amendments such as the application of common fertilizers and lime. It is ideal to maintain a pH range between 6 and 8. Outside that range, soil amendments can be made to correct the pH to be more effective. A typical carbon to nitrogen to phosphorus ratio goal of 100/10/1 is targeted to manage nutrient amendments. Typically, these amendments can be added and mixed into the soil using the same equipment used for soil aeration. The ideal soil temperatures for effective landfarming are between 50°F and 115°F. Outside those temperatures, microbial activity is decreased and landfarming is less effective; however, this is not expected to be the case at SSFL.

## 2.4.3 Soil Erosion

It is important to consider erosion from wind. Having water trucks or irrigation systems in place will help with the wind erosion; this generally will include spraying to minimize dust and constructing water management systems such as berms. Avoiding steep slopes and using berms or terraces as required will be the best alternative for water erosion.

## 2.4.4 System Monitoring

System operations and monitoring plans need to be developed for the landfarming operation to promote optimization of biodegradation rates, through irrigation, tilling, fertilizer application, and aeration. Constituent concentrations should be tracked through a well-defined monitoring plan that identifies protocols and frequency. Tracking COC, moisture, temperature, and soil nutrient ratios through a monitoring plan that identifies protocols and frequency also is important to measure progress toward active remedial goals. Table 2-5 presents a protocol for monitoring and sampling. Compliance with stormwater discharge or air quality permits also will be necessary.

TABLE 2-5
**Sampling and Monitoring Schedule for Landfarming Technology**
*Soil Treatability Soil Summary, SSFL, Ventura County, California*

| | Elapsed Month of Land Farming Activities | | | | | | |
|---|---|---|---|---|---|---|---|
| Analyses | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| TPH | X | | | | | | X |
| SVOCs | X | | | | | | X |
| PAHs | X | | | | | | X |
| VOCs | X | | | | | | X |
| pH (weekly field test kit) | X | X | X | X | X | X | X |
| Soil moisture (weekly visually) | X | X | X | X | X | X | X |
| PCBs | X | | | | | | X[a] |
| Metals | X | | | | | | X[a] |
| Dioxins | X | | | | | | X[a] |
| Nitrogen | X | | X | | X | | X |
| Phosphorus | X | | X | | X | | X |

Notes:
[a]Analysis will be conducted if detected at Week 0.
Two sampling events will be conducted over the 6-month operation: an initial baseline sampling event when the treatability study begins (time = 0) and a second event after the sixth month of operation.
Agricultural samples will be collected and submitted for offsite laboratory analysis prior to implementing landfarming. Nitrogen, phosphorus, and pH will be tested using a field test kit. Samples for these parameters will be submitted for laboratory analysis, as needed, to verify the accuracy of field equipment.

PAH = polycyclic aromatic hydrocarbon
PCB = polychlorinated biphenyl
SVOC = semivolatile organic compound
TPH = total petroleum hydrocarbons
VOC = volatile organic compound

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SECTION 3

# Landfarming Case Studies

The case studies described in this section are a compilation of publications and consultant projects that used landfarming as a technology to reduce petroleum hydrocarbon soil contamination. The geographic location of these studies include various states (Alaska, Arkansas, California) across the United States, as well as a few countries abroad (Canada, Kuwait, Venezuela, and the Netherlands). These studies were selected either because of their landfarming characteristics or because of their comparative field studies with other bioremediation technologies.

The studies also were evaluated because of their similarities to SSFL conditions as they relate to the presence of TPH concentrations in soil above LUT values that may be considered for remediation. Depth of TPH in soil is on average between ground surface and 5 feet below ground surface (bgs) and in some rare cases deep TPH exceedances are found at 15 to 20 feet bgs. Based on recent measurements, depth to water in the near-surface groundwater ranges from approximately 5 to 50 feet bgs, while depth to water in the Chatsworth Formation groundwater ranges from approximately 25 to 450 feet bgs. Presence of sensitive habitats, including protected or sensitive species, protected flora, or an identified cultural resource were identified. The Environmental Impact Study provides a current evaluation of sensitive habitat (NASA, 2014a). Physical site features such as rock outcrops, slopes, site accessibility for vehicle or equipment, size of an area, and security of the area (that is, fencing) are considered.

Several studies from colder regions (Alaska and Canada) are included in this report. Although climatic conditions are very different from SSFL, the contribution of these studies is important documentation of landfarming effectiveness even at low temperatures. Bioremediation was shown to take place at 5 degrees Celsius ($^{o}$C) but at a reduced rate, whereas at 18$^{o}$C bioremediation occurred at a much higher rate (Paudyn et al., 2007). Furthermore, several studies show that landfarming was successful in reducing elevated TPH concentrations in soil to levels slightly above or below the SSFL active remedial goal.

## 3.1 Pipe and Supply Yard, Kenai, Alaska, U.S.

**Project Description**: Approximately 60,000 yd$^3$ of xylene-impacted soil within a wildlife refuge and proximity to a fish-bearing river. Because of the sensitive habitat, the site had a very stringent risk-based cleanup level (24.7 mg/kg of xylene).

**Results**: Landfarming operations were successful in reducing xylene concentrations from 10,000 mg/kg to less than 24.7 mg/kg in 7 to 10 days with continuous tilling. Farmed in 2,000-yd$^3$ batches and 18-inch lifts using a spader mounted to a farm tractor, soil was tilled 8 to 10 hours/day with no amendments.

**Applicability to SSFL:** Landfarming was successful in reducing elevated TPH concentrations in the soil to levels below the SSFL active remedial goal of 1,000 mg/kg, even at lower temperatures than expected at SSFL.

## 3.2 Oil Field Production Facility, Alaska, U.S.

**Project Description**: A number of landfarming projects were implemented across an oil field production facility in Alaska. Standard operating procedures also were developed.

**Results**: Landfarming generally was successful at the sites with gravel or sandy soil, but less successful for the sites with high organic (peat) soil.

**Applicability to SSFL:** Landfarming was successful for soil types similar to those found at SSFL.

## 3.3 Fueling Station, Alaska, U.S.

**Project Description**: A landfarm system designed, built, and operated to treat 2,500 yd$^3$ per year capacity, which was later expanded to 5,800 yd$^3$ per year. It accepts hydrocarbon impacted soil (primarily arctic diesel and jet fuel) from excavation remedies at various sites at a military base. Soil is tilled/aerated using a tractor in 18-inch

lifts and N-P fertilizer is used for nutrients. Soil is treated for one to two seasons (early June to early October), removed, and used as landfill cover.

**Results**: Initial TPH-gasoline range organics (GRO) less than 10,000 mg/kg and TPH-diesel range organics (DRO) less than 25,000 mg/kg (criteria for unlined treatment cell). Final sampling results indicate a decrease in direct contact and outdoor inhalation cleanup levels for soil cover (GRO less than 1,400 mg/kg and DRO less than 10,250 mg/kg).

**Applicability to SSFL:** Landfarming was successful in reducing elevated TPH-GRO concentrations in the soil to levels near the SSFL active remedial goal of 1,000 mg/kg.

## 3.4 Landfarming and Composting of Oily Water at Chevron Sites, U.S.

**Project Description:** The Chevron Research and Technology Group, Richmond, California, has used both landfarming and composting successfully in a variety of petroleum production facilities and at oil refineries at various sites in the United States (O'Reilly et al., 1997). Chevron discusses fundamental processes of biological waste treatment and describes how landfarming and composting are applied within the oil industry. The case studies looked at the effectiveness of landfarming and composting of oily soil and landfarming of oil and gas production wastes.

**Results**: The first study evaluated remediation of oily soil with landfarming and composting. In both systems concentrations decreased approximately 70 percent over the first month of treatment with no significant decrease in subsequent 5 months. Specific chemical analyses demonstrated that the reduction in oil concentrations were due to biodegradation. Initial oil concentrations were estimated at 10.7 percent (or 107,000 mg/kg) and at 3.4 percent (or 34,000 mg/kg) after a month.

The second study evaluated oil and gas production waste remediation. The landfarm was effective in significantly reducing the oil concentration of the production wastes treated. TPH concentrations were reduced by 70 percent over the treatment season. Initial concentrations at the site ranged within various samples from 1,500 to 4,500 mg/kg. Final concentrations at the site ranged across the samples from less than 10 to 1,500 mg/kg except for one sample where concentrations were above 3,000 mg/kg.

**Applicability to SSFL:** In one study, landfarming was successful in quickly (1 month) and significantly reducing very high TPH concentrations in the soil. At another site, TPH concentrations in the soil were reduced to levels near or below the SSFL active remedial goal of 1,000 mg/kg.

## 3.5 Bioremediation of Oil-contaminated Soil in Kuwait

**Project Description**: A bioremediation field experiment was carried out in the Kuwait desert to remediate soil contaminated by oil as a result of the Gulf War. Three different technologies including landfarming, windrow composting, and static bioventing were able to significantly reduce concentrations. Soil TPH concentrations were 3.5 to 4.5 percent (or 35,000 to 45,000 mg/kg) in the more heavily contaminated soil and 2 percent (or 20,000 mg/kg) in the less contaminated soil (Chino et al., 2001).

The study included the remediation of composting piles using a pile-turner to mix the soil and remediate 5,500 cubic meters ($m^3$) of oil contaminated soil. The pile-turner machine has rotary knives to turn the soil at 200 rotations per minute. Water also was supplied through the pile turner to maintain soil moisture between 8 and 10 percent.

**Results**: Results of the study show the following key points:

- TPH Reduction: The treatment duration was 15 months and total TPH was degraded 80 percent. TPH reduction effectiveness was similar for both pile-turner technology and landfarming.
- Water Usage: Pile-turner technology required relatively little water (1 to 1.5 $m^3$ per $m^3$ of soil per year), whereas landfarming required more than three times as much water per unit of soil.
- Effect of Soil Salinity: Degradation is inferior in high salinity soil.

- Based on the analytical results of this study, the proposed treatment goal of the oil contaminated soil in Kuwait is 10,000 mg/kg (or 1 percent) because soil contaminated below this level does not have an oily odor or film and could be used for vegetation. For lightly contaminated soil, 2 to 3 months of bioremediation could be enough to remove oily odor and oil film.

Table 3-1 shows the comparison of each bioremediation technology evaluated in this study in Kuwait. Landfarming technology was effective but the water consumption was very high. The pile turner technology also was effective and the water consumption was relatively low and did not require as much area. Therefore, pile turner technology is recommended. If contamination depth is less than 50 centimeters (cm), in situ landfarming is also recommended. If soil contaminated are very low (less than 1 percent TPH), static bioventing pile technology is proposed.

**Applicability to SSFL:** Landfarming was effective in reducing elevated TPH concentrations in the soil in Kuwait, a climate warmer than California's. Water consumption was high, which should be considered for the NASA sites, even though California's weather is cooler than the weather in Kuwait.

TABLE 3-1
**Comparison of Bioremediation Technologies**
*Soil Treatability Soil Summary, SSFL, Ventura County, California*

| | Landfarming | Windrow Composting | Static Bioventing | Pile-Turner |
|---|---|---|---|---|
| Water Feed Method | Rotary irrigation system | Leachy pipes and top water | Leachy pipes and top water | Supplied through the pile turner |
| Air Feed Method | Tractor and tiller | Mixing by front loader | Supplied from the bottom of the pile by air compressor | Supplied by the pile turner during mixing |
| Result after 12 months | 80 percent of TPH had been degraded | 70 percent of TPH had been degraded | 70 percent of TPH had been degraded | 80 percent of TPH had been degraded |
| Water Consumption | 17-20 $L/m^3/d$ in summer<br>5 $L/m^3/d$ in winter, spring, summer<br>6 $m^3/m^3$ of soil total | 4-7 $L/m^3/d$ in summer<br>1 $L/m^3/d$ in winter, spring, summer<br>1.4 $m^3/m^3$ of soil total | 4-8 $L/m^3/d$ in summer<br>1 $L/m^3/d$ in winter, spring, summer<br>1.6 $m^3/m^3$ of soil total | 4-8 $L/m^3/d$ in summer<br>1 $L/m^3/d$ in winter, spring, summer<br>1.2-1.8 $m^3/m^3$ of soil total |
| Required Equipment | Tractor and tiller, irrigation system optional | Front Loader, Leachy Pipes | Compressor, leachy pipes | Pile turner |

Notes:
Source: Chino et al., 2001
$L/m^3/d$ = liters per cubic meter per day

## 3.6 Intensive and Extensive Treatment of Dredged Sediments on Landfarms in the Netherlands

**Project Description**: Landfarming was used was used on experimental fields in the Netherlands using contaminated sediments from "Petroleumhaven" harbor in Amsterdam and Wemeldinge harbor in the province of Zeeland in the Netherlands (Harmsen et al., 1997).

**Methodology**: The first step in this landfarming project was an intensive treatment in which the readily available part of the contaminant was removed. The sediments were anaerobic and required dewatering to increase the probability of finding oxygen in the soil so it was no longer the limiting factor. Dewatering was achieved through:

1. Evaporation in the spring and summer
2. Intensive drainage with drainage systems and pumped ditches to eliminated surplus water
3. Cultivation to improve oxygen diffusion through the soil profile

The second step in this landfarming project consisted of removing less readily available contaminants, through an extensive treatment (also referred to as intrinsic landfarming). This second step began when cultivation and other activities no longer had a noticeable effect on degradation rates. During this step, residual concentration of contaminants gradually became available. To allow degradation to continue, the soil required treatment in such a manner that over the long term, aerobic circumstances were maintained.

**Results**: The study results and conclusions include the following:

- Polluted sediments can be decontaminated by means of landfarming.
- The landfarming method (intensive versus extensive) to be used depended on the limiting factor in the sediment.
- Complete removal of the contaminant may take several decades. This study estimated that complete decontamination (down to Dutch levels of reference of 1 mg/kg of dry matter) could take 10 to 40 years, depending on the types of sediments used in the study.
- Results show that after the initial step (800 days of intensive landfarming) sediment concentrations of polycyclic aromatic hydrocarbons (PAHs) were reduced by 92 percent (500 to 40 mg/kg) in one case and 25 percent in another case (40 to 30 mg/kg). The mineral oil was degraded by 72 percent (from 11,000 to 3,100 mg/kg) in one case and 68 percent (from 2,200 to 700 mg/kg) in another case.
- Results on different sediments that already had gone through intensive landfarming were further reduced in PAH concentrations during the second extensive landfarming effort. These sediments were transferred to an experimental field in 50- to 70-cm layers. Concentrations decreased from 7 to 3.6 mg/kg in one case, and from 25 to 17.3 mg/kg. Concentrations had already been reduced in the first landfarming step from 71 to 7 mg/kg and 113 mg/kg to 25 mg/kg, respectively.

**Applicability to SSFL:** PAHs are present alongside TPH at NASA sites. The active remediation goal for PAH concentrations is 37.8 mg/kg. Landfarming was successful in reducing PAH concentrations in the soil to levels below NASA's active remediation goal for PAH.

## 3.7 Applying Field-Expedient Bioreactors and Landfarming in Alaskan Climates, U.S.

**Project Description**: The landfarm used in this study is located in Fairbanks, Alaska. Contaminated soil with No. 1 fuel oil and a mixture of diesel No. 2 with unknown petroleum water products was placed in the landfarm in August 1991. The study (Reynolds et al., 2004) focuses on the remediation that occurred during the summer of 1992. The volume of soil to be treated was approximately 1,200 $yd^3$.

**Methodology**: This study focused on the feasibility of onsite treatment by using landfarming and field-expedient bioreactors such as recirculating leachbeds, similar to slurry reactors. The concept is to develop a lined containment area to serve as the bioreactor; either a pit or a bermed perimeter can be used. Contaminated soil is placed into the bioreactor and aerated, and nutrient amended water is recirculated into the bottom of the bioreactor, upward through the contaminated soil, and then through overlying ponded and aerated water. Skid-mounted mechanical systems include a mixing tank and circulation pumps for water and air.

**Results**: The study results and conclusions include the following:

- Landfarming can be used to treat the less-contaminated soil, which often comprises the bulk of the contaminated soil volume.
- Highly contaminated soil can be readily contained and treated onsite using recirculating leachbeds.
- In field evaluations, the spatial average of total petroleum hydrocarbon concentration in a diesel-contaminated soil decreased from 6,200 to 280 mg/kg in approximately 7 weeks.
- At another site where a recirculating leachbed was used to decrease TPH concentration in diesel-contaminated soil from between 300 and 47,000 mg/kg to 240 and 570 mg/kg in a 5-week period.

- The complimentary use of these two technologies provides a cost effective treatment option. The more rapid remediation of the recirculation leachbed can be used alone or in conjunction with landfarming and could provide an expedient means to treat highly contaminated soil, thereby increasing the potential for landfarming the remaining soil without liner requirements.

**Applicability to SSFL:** Landfarming was successful in reducing elevated TPH concentrations in the soil to levels below the SSFL active remedial goal of 1,000 mg/kg.

## 3.8 Remediation of Soil PAH: Comparison of Biostimulation and Bioaugmentation, Arkansas, U.S.

**Project Description**: A pilot scale landfarm TS was designed to demonstrate improved bioremediation of PAHs using bioaugmentation in combination with bulking agents and slow release nitrogen (biostimulation). The POPILE, Inc. Superfund Site is a former wood treatment facility located in El Dorado, Arkansas. The primary contaminants found at the site include PCP (greater than 1,200 mg/kg) and PAHs (greater than 10,000 mg/kg).

**Methodology**: Three galvanized steel water troughs (10 feet by 3 feet by 2 feet) were used to contain the contaminated soil and the various amendments in the pilot facility. Pan 1 was left untreated. Pan 2 was amended with bulking agents (ground rice hulls with a particle density of 19 to 24 pounds per square foot) and slow-release organic nutrient. Pan 3 was amended with the bulking agent, nutrients (slow release nitrogen 12-0-0) and bioaugmented with a known surfactant producer, a *Pseudomonas* sp (Strain #64 with a cell density of $10^6$ cells per milliliter). All pans were mixed weekly using a mechanical rotary cultivator and soil moisture was maintained at 50 to 80 percent of the field soil moisture capacity.

**Results**: Initial PAH concentrations were 10,500 mg/kg, 7,200 mg/kg, and 7,300 mg/kg for Pan 1, 2, and 3, respectively. After 16 months, only 12 percent degradation was observed in Pan 1 (control). An initial lag was observed for Pan 2 and Pan 3 that was attributed to acclimation of the bacteria. Following this, Pan 3 exhibited a higher degradation rate that was maintained through month 7. At 16 months, Pan 2 and Pan 3 showed 86 percent and 87percent degradation of total PAH, respectively.

Contaminant reduction extended into the 4-ring homologues (fluoranthene, pyrene) and the benzo(a)pyrene toxic equivalence quotient (BaP TEQ) compounds (chrysene, benzo(a)antracene). The results suggested landfarming is possible for sites with high concentrations of PAHs (greater than 10,000 mg/kg) by using these alternative treatment strategies.

**Applicability to SSFL**: PAHs are present alongside TPH at NASA sites. Landfarming was successful in reducing elevated PAH concentrations in the soil.

## 3.9 Decommissioning Diesel Generating Stations in Sub-Arctic Canada: A Six-year Progress Report

**Project Description**: In 1995, Bell Canada and a government partner used landfarming to remediate several sites in remote areas with air access only. Twenty-four sites had diesel contaminated soil with quantities ranging from 50 to 1,500 $m^3$. Remediation objectives were determined to be 100 parts per million (ppm) TPH. A commitment to act in an environmentally sustainable manner meant using natural materials (such as locally collected peat moss) rather than plastics for liners; using rototillers for aeration rather than blowers; and designing treatments to use no electricity, no activated carbon, no piping, and no requirements for decommissioning following bioremediation.

**Methodology**: Peat moss was laid over bare soil to a thickness of 15 cm, then 15 cm of sand was spread over the moss to protect it from damage by the rototiller. Contaminated soil was then spread over the sand as thinly as possible up to 50 cm thick. Commercial fertilizer was added to the soil and a rototiller was used to mix and aerate the soil, taking care not to disturb the liner.

**Results:** At three sites, the residual TPH level in the soil were close to 100 mg/kg within the first 13 months from starting concentrations of about 4,000 mg/kg. These sites had clayey soil and the landfarms were tilled monthly. Soil samples taken under the moss liners had no detectable TPH (< 10 mg/kg).

A larger number of sites had a very active first year but they "stalled" at an average concentration between 1,000 and 3,000 mg/kg TPH for the next two to three years. When stratified sampling was done to distinguish between the top layer of soil (< 20 cm) and the rest of the landfarm (20 to 50 cm), the upper layer was usually found to be much less contaminated (< 100 mg/kg) than the deeper soil layers. The reasons for this difference were assumed to include better aeration in the top layer from tilling, warmer temperatures, better drainage/more rainfall, and more fertilizer applied to the top.

The study (Mortimer, 2001) concludes that landfarming and the use of a rototiller for aeration proved to be an economical method for diesel fuel contaminated soil remediation.

**Applicability to SSFL:** When tilling and soil mixing was most active, landfarming was successful in reducing TPH concentrations in the soil to levels below the SSFL active remediation goal of 1,000 mg/kg.

## 3.10 Remediation in a Remote Northern Site: A Case Study, Canada

**Project Description**: The project site is near MacDowell Lake, located 150 kilometers northeast of Red Lake, Ontario (Reinecke et al., 2001). Diesel generators supplied from five 4,550-liter aboveground tanks were used to power telephone equipment at the site. Initial assessments when the tanks were decommissioned in 1995 found surface contamination in a bermed area. Liquid phase petroleum also was found in groundwater in 1997. The contaminated soil from the bermed area was treated by landfarming.

**Methodology:** Two landfarming areas have been constructed: the first in 1996 and the second in 1999. These areas measured 8 meters (m) by 13 m and 15 m by 20 m, respectively. Soil at the 1999 landfarm, which has deeper impacted soil than the 1996 landfarm, was turned over approximately four times using an excavator. Clay content of the soil in the landfarm makes aeration and fertilizer addition difficult as the soil is either too dry or too wet, and forms clots when rototilled.

**Results**: Soil diesel concentrations dropped rapidly during the first field season from 12,000 to 4,000 mg/kg, but the rate of mass loss appeared to decrease significantly beyond that point and stabilized at 3,000 mg/kg. These concentrations still exceed regulatory limits, but landfarm remediation has been relatively successful. Contaminant mass has been removed in a technologically simple and non-resource intensive manner.

Fertilizer was applied in the bermed area with large volumes of water (30,000 liters) surficially and through injection wells in 1996 over a 4-month period. Oxygen-releasing compound (ORC) was also placed in injection wells. These onsite remediation efforts were unsuccessful compared to the performance of the landfarms.

**Applicability to SSFL:** Landfarming reduced elevated diesel range TPH concentrations in the soil to levels above the SSFL active remediation goal of 1,000 mg/kg; nevertheless, in one season, TPH concentrations were significantly lower than initial levels.

## 3.11 Summary

Table 3-2 summarizes the landfarming projects that were reviewed for this paper study.

TABLE 3-2
**Summary of Remediation Results with Landfarming Projects Reviewed**
*Soil Treatability Soil Summary, SSFL, Ventura County, California*

| Location | Project Description | Remediation Results |
|---|---|---|
| Kenai, Alaska, U.S. | Landfarming of 60,000 $yd^3$ of xylene-impacted soil. Stringent risk-based cleanup level (24.7 mg/kg xylene) because of site location within a wildlife refuge and proximity to fish-bearing river. | Xylene concentrations reduced from 10,000 mg/kg to less than 24.7 mg/kg.<br>Farmed in 2,000 $yd^3$ batches and 18-inch lifts using a spader mounted to a farm tractor, tilled 8 to 10 hours/day with no amendments. |
| Alaska U.S | Landfarming on a number of different sites across an oil field production facility. | Landfarming was generally successful at the sites with gravel or sandy soil, but less successful for the sites with high organic (peat) soil. |

TABLE 3-2
**Summary of Remediation Results with Landfarming Projects Reviewed**
*Soil Treatability Soil Summary, SSFL, Ventura County, California*

| Location | Project Description | Remediation Results |
|---|---|---|
| Colorado, U.S | Landfarming was used to treat TPH and PAH contaminated soil. Tilling, irrigation, and fertilizer application was performed in a prepared bed. | Treatment standards for the hydrocarbons was achieved. Treatment pad was finally covered to control possible exposure from the residual contaminants. |
| Alaska, U.S. | Landfarm used for remediation of arctic diesel and jet fuel-impacted soil. | Reduced TPH-GRO from 10,000 to 1,400 mg/kg and TPH-DRO from 25,000 mg/kg to 10,250 mg/kg.<br>Soil tilled/aerated using tractor in 18-inch lifts. Nitrogen and Phosphorus fertilizer used. Soil treated for one to two seasons, removed, and used as landfill cover. |
| Richmond, California, U.S. | Landfarming and composting used in a variety of petroleum production facilities and at oil refineries. | Reduced oily soil concentrations over the first month from 107,000 to 34,000 mg/kg.<br>In separate study, reduced TPH concentrations from range of 1,500 to 4,500 mg/kg down to range of 10 to 1,500 mg/kg. |
| Kuwait | Landfarming, windrow composting, and static bioventing were used. Study included remediation of composting piles with a pile turner to remediate oil contaminated soil. | Treatment duration was 15 months and TPH reduction was 80 percent. Pile turner technology effectiveness was similar to that of landfarming. |
| Netherlands | Landfarming used. Dewatering was required with intensive drainage. Cultivation used to improve oxygen diffusion through the soil profile. | After 800 days of intensive landfarming, PAH concentrations reduced from 500 to 40 mg/kg in one case, and 40 to 30 mg/kg.<br>The oil was degraded from 11,000 to 3,100 mg/kg in one case, and from 2,200 to 700 mg/kg in another case.<br>Second step landfarming further decreased PAH concentrations by 30 to 50 percent. |
| Fairbanks Alaska, U.S. | Landfarming and recirculating leachbeds or field-expedient bioreactors used. Soil was aerated and amended with nutrient and water recirculated into the bottom of the bioreactor. | TPH decreased from 6,200 mg/kg to 280 mg/kg in approximately 7 weeks using landfarming.<br>TPH concentration in diesel-contaminated soil dropped from range of 300 to 47,000 mg/kg down to range of 240 to 570 mg/kg in a 5-week period on other site with recirculating leachbed.<br>Complimentary use of these two technologies provide a cost effective treatment option. |
| El Dorado, Arkansas, U.S. | A pilot scale landfarm TS for bioremediation of PAHs using bioaugmentation in combination with bulking agents and slow release nitrogen (biostimulation). | PAH concentrations ranged from 10,500 to 7,200 mg/kg. After 16 months, total PAH degradation was 12 percent in the control, 86 percent in Pan 2 and 87 percent in Pan 3. |
| Canada | Landfarming used on 24 sites with diesel contaminated soil with quantities ranging from 50 to 1,500 $m^3$. Used peat moss over bare soil, sand over moss, Contaminated soil over sand in layer of up to 50 cm. Commercial fertilizer added to the soil and rototiller used to mix and aerate soil. | TPH concentrations reduced from 4,000 to 100 mg/kg within the first 13 months in three landfarming sites with clayey soil tilled monthly. Soil samples taken under the moss liners had no detectable TPH (less than 10 mg/kg). |

TABLE 3-2
**Summary of Remediation Results with Landfarming Projects Reviewed**
*Soil Treatability Soil Summary, SSFL, Ventura County, California*

| Location | Project Description | Remediation Results |
|---|---|---|
| MacDowell Lake, Ontario Canada | Two landfarming areas constructed in 1996 and 1999. They measured 8-m by 13-m and 15-m by 20-m, respectively. | Soil diesel concentrations dropped from 12,000 to 4,000 mg/kg, but the rate of mass loss appeared to decrease significantly beyond first season and stabilized at 3,000 mg/kg. |

Notes:
cm = centimeter(s)
DRO = diesel range organic
GRO = gasoline range organic
m = meter(s)
$m^3$ = cubic meter(s)
mg/kg = milligram(s) per kilogram
PAH = polycyclic aromatic hydrocarbon
TPH = total petroleum hydrocarbons
TS = treatability study

SECTION 4

# Landfarming Staging Areas at SSFL

Although some areas of SSFL have difficult terrain (steep slopes, rocky areas, or terrain with large boulders and rock outcrops), several areas have been identified to serve in landfarming remedial planning. SSFL areas were evaluated based on several parameters, including site topography (flat or less than 10 percent slope), size, accessibility, surface soil, presence of COCs, availability of area for use over a 6-month to a 2-year period taking into account planned or current demolitions, and the presence of cultural sites and historic districts. The areas were then grouped into different categories based on their suitability to accommodate anticipated activities: landfarming operations for the remediation of soil, staging, and vehicle/equipment parking.

Figure 4-1 shows the 12 areas evaluated for landfarming. Some are identified as unlikely candidates for landfarming. Others are identified as staging or parking areas for equipment, supplies, or temporary soil storage prior to landfarming because these areas are not suited for soil laydown and active landfarming activities. Those areas identified for landfarming operations have adequate slope and are large enough to be used for landfarming. A table is included in the figure to document the square footage for each area. Table 4-1 lists the advantages and limitations of the potential landfarming operations areas. These areas are subject to change depending on future activities, such as demolition, clearing, and excavations that will occur at the various sites. Table 4-2 lists the areas available for landfarming in square feet.

TABLE 4-1
**Description of Landfarming Staging Area Advantages and Limitation**
*Soil Treatability Soil Summary, SSFL, Ventura County, California*

| Description of Area | Limitations | Advantages | Anticipated Activities |
|---|---|---|---|
| **1. PLF – Pad of former PLF building** | **• Single vehicle dirt road access<br>• Steep drop off on north, south, west side of area<br>• May be impacted by traffic associated with demolition of Delta Area and may be used as staging area for demolition of lower Delta Area** | **Flat and fairly accessible** | **Landfarming operations** |
| 2. CDFF – Gravel pad south of Test Area Road, Test Area Road, and a portion of CDFF | • Southern portion of polygon is gravel pad ranging in depth from 2 feet to approximately15 feet<br>• Area used during rainy season for staging of stormwater collection tanks<br>• Area north of Test Area Road to undergo demolition in 2016 | Gravel pad is flat and accessible | None |
| 3. Bravo Area – Asphalt and concrete areas west of test stands | • Polygon entirely within Bravo historic district<br>• Should not be considered until the final disposition of the district has been decided | None | None |
| **4. Alfa Area – Building 208 and parking lot west of building** | **• Over 50% of the polygon is on top of a building<br>• Building 208 is within the Alfa Historic District<br>• Potential useable area limited to asphalt parking lot west of Building 208<br>• Buffer will need to be in place around building to ensure Building 208 is protected** | **Parking lot is close to minimum dimensions** | **Landfarming operations, staging** |
| 5. SPA West – Area around Building 927 | • Within NASA's 90-day hazardous waste storage area<br>• No area suitable for landfarming operations at this location | Suitable for temporary parking of small vehicles | Parking, staging |
| 6. SPA East – Area around Building 928 and 777 | • Within NASA's 90-day hazardous waste storage area<br>• No area suitable for landfarming operations at this location | Suitable for temporary parking of small vehicles | Parking, staging |

TABLE 4-1
**Description of Landfarming Staging Area Advantages and Limitation**
*Soil Treatability Soil Summary, SSFL, Ventura County, California*

| Description of Area | Limitations | Advantages | Anticipated Activities |
|---|---|---|---|
| **7. Sewage Treatment Plant – Asphalt covered area west of Sewage Treatment Plant** | **• Area scheduled for Phase 2 demolition<br>• Actual demolition schedule unknown - likely in 2016** | **All asphalt scheduled to be removed according to current demolition plans** | **Landfarming operations, staging** |
| **8. Former parking lot south of Building 204 – Terraces** | **• Some terraces cannot be used because Southern California Edison requires easement access to tower in this area** | **Some terraces are flat and accessible by roads on either side of area** | **Landfarming operations, staging for southern terrace** |
| 9. Parking lot west of Building 207 – Parking lot between Buildings 207 and 206 | • Currently used as office trailer location, staging area, and parking area for demolition through 2017 or 2018<br>• Will likely be used as container storage area for remediation<br>• Number of electrical/telephone poles cross the useable space | May be suitable for limited equipment staging and parking | Parking, Staging |
| **10. HWSA – HWSA Pad** | **• Area will need extensive vegetation clearing prior to use** | **Largest flat and contiguous unpaved area in Area II that is outside of a historic district** | **Landfarming operations, staging, parking** |
| **11. LOX Plant – eastern upper LOX Plant area** | **• Excavations have made area not level<br>• Area will undergo additional demolition to remove concrete footings, piping, wiring present in subsurface, but anticipated to be removed before implementation of remediation activities<br>• Substantial earthwork would be required to make entire area useable** | **Northeastern corner of LOX has been excavated to bedrock** | **Landfarming operations** |
| 12. Helipad – Main Helipad area | • Many competing uses for space<br>• Area planned to be used for remediation staging and larger scale demolition staging<br>• Slope of 5%<br>• Must retain sandbag berms and trucking routes<br>• In winter/spring, water ponds behind berms | Relatively flat asphalt area | Staging, parking |

Notes:
**Bold and Shaded Text** indicates that Areas will likely be used for landfarming operations
CDFF = Coca/Delta Fuel Farm
HWSA = Hazardous Waste Storage Area
LOX = Liquid Oxygen
PLF = Propellant Load Facility
SPA = Storable Propellant Area

TABLE 4-2
**Landfarming Staging Areas**
*Soil Treatability Soil Summary, SSFL, Ventura County, California*

| Staging Areas Location Reference | Name | Area ($ft^2$) | Type of Use |
|---|---|---|---|
| **1** | **PLF** | **16,090** | **Landfarming operations** |
| 2 | CDFF | 13,669 | Not available |
| 3 | Bravo Area | 40,481 | Not available |
| **4** | **Alfa Area** | **3,347** | **Landfarming operations** |
| 5 | SPA West | 3,000 | Staging, parking |
| 6 | SPA East | 3,000 | Staging, parking |
| **7** | **AP/STP** | **7,650** | **Landfarming operations** |
| **8** | **Former Parking** | **13,976** | **Landfarming operations** |
| 9 | ELV Area | 2,000 | Staging, parking |
| **10** | **HWSA** | **28,539** | **Landfarming operations** |
| **11** | **LOX Plant** | **43,480** | **Landfarming operations** |
| 12 | Helipad | 50,000 | Staging, parking |
| **Total** | | **113,082** | **Landfarming Operations Areas** |
| Total | | **58,000** | **Staging, Parking Areas** |

Notes:
**Bold and Shaded Text** indicates that areas will likely be used for landfarming operations

AP/STP = Ash Pile/Sewage Treatment Plant
CDFF = Coca Delta Fuel Farm
ELV = Expendable Launch Vehicle
$ft^2$ = square foot (feet)
HWSA = Hazardous Waste Storage Area
LOX = Liquid Oxygen
PLF = Propellant Load Facility
SPA = Storable Propellant Area

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**Legend**

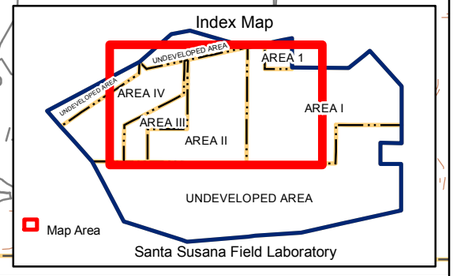
- Proposed Landfarming or Staging Area
- Proposed Staging or Parking Area
- Unlikely Candidate for Landfarming
- Only Portion of Area Available for Staging or Parking
- Stream
- Paved Road
- Dirt Road
- Pond, without water
- General Site Area including SWMU or Area of Concern
- Administrative Area
- SSFL Property Boundary

B204
ELV
12
Area II Landfill
LOX
11
9
7
8
B515 STP
Ash Pile
6
ABFF
4
SPA
Alfa
5
10
WCT
Bravo
3
CDFF
2
1
SKYLINE
R-2A and R-2B Ponds
PLF
Coca
Delta

Note: Proposed Staging Areas depicted on this figure are subject to change.

| Landfarming Staging Areas | | |
|---|---|---|
| Ref # | Name | Area (sqft) |
| 1 | PLF | 16089.5 |
| 2 | CDFF | 13669.2 |
| 3 | Bravo | 40480.7 |
| 4 | Alfa | 3346.5 |
| 5 | SPA West | 3000 * |
| 6 | SPA East | 3000 * |
| 7 | AP/STP | 7649.5 |
| 8 | Former Parking | 13975.5 |
| 9 | ELV | 2000 * |
| 10 | HWSA | 28539.1 |
| 11 | LOX | 43479.7 |
| 12 | Helipad | 50000 * |

* Estimated available areas within the space depicted on Figure




N
W
E
S

0 500 1,000 2,000 Feet

0 150 300 600 Meters

25-May-2016
Drawn By:
A. Cooley

**Figure 4-1**
**Proposed Landfarming Staging Areas**
**Review of Landfarming Effectiveness for TPH Remediation**
**Santa Susana Field Laboratory**
**Ventura County, California**

Map Document: O:\NASA\SSFL\maps\TreatabilityStudy\Landfarming_StagingAreas_V2.mxd

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SECTION 5

# Background of Bench Scale Sites

The bench scale TS included soil washing and thermal desorption for contaminated soil from the CDFF and ABFF, respectively. Figures 5-1 and 5-2 show the location of the Coca/Delta Fuel Farm (CDFF) and the Alfa/Bravo Fuel Farm (ABFF), respectively.

## 5.1 History of Operations

The CDFF and ABFF served as bulk fuel storage facilities to support operations at the NASA-administered test stands. Each fuel farm primarily consisted of large aboveground storage tanks (ASTs), which ranged from 10,000 to 33,000 gallons in capacity and contained petroleum-based fuels. The fuel farms had secondary containment around the ASTs and fuel pumps. Fuel was pumped from the ASTs through conveyance pipelines to either the Alfa and Bravo Test Stands or the Coca and Delta Test Stands.

The CDFF was active from 1955 to 2006 and also was used for chemical storage. In addition to petroleum ASTs, the CDFF area had two 10,000-gallon ASTs for nitrogen storage and one sphere with unknown contents. In addition, the CDFF contained an earthen burn-off pit, an X-ray operations and storage facility (Building 2226), a liquid nitrogen office (Building 2778), and a helium storage area (Area 2518, including Building 2388). In the 1960s, hydrogen replaced Rocket Propellant 1 (RP-1) as the propellant used during testing conducted at the Coca Test Stands. As a result, most of the CDFF was deactivated. Most of the site infrastructure has been removed and/or demolished and the site is now designated as an Area II AOC.

The ABFF was active from 1955 until 2006. In addition to the petroleum ASTs in the fuel farm, four ASTs are located outside the fuel farm area, one of which is known to have contained helium; the contents of the other three ASTs are unknown. The ABFF currently is inactive, with five empty fuel ASTs, and has been designated as an Area II AOC. Supplemental background information, operational histories, past investigations, and conceptual site models (CSMs) for the study areas are provided in the project work plan (NASA, 2014b). More thorough historical evaluations and detailed results of sampling efforts are presented in the Field Sampling Plan 1 (FSP-1) report (NASA, 2013a) and Field Sampling Plan 6 (FSP-6) report (NASA, 2013b) for soil collected from the CDFF for soil collected from the ABFF. The soil washing and thermal desorption activities were performed by Hazen Research, Inc. (Hazen). Implementation of the TS was conducted in accordance with the project work plan (NASA, 2014b).

## 5.2 Site Descriptions

### 5.2.1 Coca/Delta Fuel Farm

The soil washing bench scale test was focused on soil from boring CDBS1045, southeast of Building 2226 at the CDFF (Figure 5-1). At this boring, soil collected from 0 to 1 foot bgs had dioxins, PCBs, pesticides, silver, and TPH present at concentrations above the LUT values (DTSC, 2013) or Quality Assurance Project Plan (QAPP) Reporting Limits (RLs). Soil collected from 5 to 6 feet bgs contained TPH at concentrations above the screening levels and soil collected from 10 to 11 feet bgs contained pesticides and TPH at concentrations above the screening levels. Concentrations of soil contaminants from boring CDBS1045 are summarized in Table 5-1.

The boring log for CDBS1045 documented the soil as silty sand from ground surface to 2 feet bgs, and poorly graded, dry, loose, very fine sand to 11 feet bgs, where refusal was met. Saturated soil was not encountered in this boring.

TABLE 5-1
**Summary of Concentrations at Soil Boring CDBS1045**
*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Sample Depth | Parameter Name | Method | Concentration | Unit | Screening Level | Unit |
|---|---|---|---|---|---|---|
| 0 | TPH (C20-C30) | SW8015B | 75,000 | µg/kg | 5,000 | µg/kg |
| 0 | TPH (C31-C40) | SW8015B | 120,000 | µg/kg | 10,000 | µg/kg |
| 0 | TPH (C8-C40) | SW8015B | 190,000 | µg/kg | 10,000 | µg/kg |
| 0 | DIOXTEQ | | 17 | µg/kg | 0.912 | µg/kg |
| 0 | Silver | SW6020 | 0.477 | µg/kg | 0.20 | µg/kg |
| 0 | Aroclor-1254 | SW8082 | 18 | µg/kg | 17 | µg/kg |
| 0 | Endosulfan Sulfate | SW8081 | 0.60 | µg/kg | 0.48 | µg/kg |
| 5 | TPH (C20-C30) | SW8015B | 51,000 | µg/kg | 5,000 | µg/kg |
| 5 | TPH (C31-C40) | SW8015B | 66,000 | µg/kg | 10,000 | µg/kg |
| 5 | TPH (C8-C40) | SW8015B | 120,000 | µg/kg | 10,000 | µg/kg |
| 10 | TPH (C20-C30) | SW8015B | 88,000 | µg/kg | 5,000 | µg/kg |
| 10 | TPH (C31-C40) | SW8015B | 140,000 | µg/kg | 10,000 | µg/kg |
| 10 | TPH (C8-C40) | SW8015B | 230,000 | µg/kg | 10,000 | µg/kg |
| 10 | Dieldrin | SW8081 | 1.10 | µg/kg | 0.48 | µg/kg |

Notes:
µg/kg = microgram(s) per kilogram
DIOXTEQ = dioxins toxic equivalency
TPH = total petroleum hydrocarbons

### 5.2.2 Alfa/Bravo Fuel Farm

The thermal desorption bench scale test was focused on soil from boring ABBS1018, adjacent to the existing 33,000-gallon southwestern RP-1 AST at the ABFF (Figure 5-2). At this boring, soil collected from 0 to 0.5 foot bgs contained antimony at a concentration above the LUT value, and soil collected from 4.5 to 10 feet bgs (sample intervals of 4.5 to 5 feet bgs and 9.5 to 10 feet bgs) contained antimony and TPH at concentrations above the screening levels. Elevated concentrations of soil contaminants from boring ABBS1018 are summarized in Table 5-2.

TABLE 5-2
**Summary of Concentrations at Soil Boring ABBS1018**
*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Sample Depth | Parameter Name | Method | Concentration | Unit | Screening Level | Unit |
|---|---|---|---|---|---|---|
| 0 | Antimony | SW6010B | 6.2 J | mg/kg | 0.86 | mg/kg |
| 4.5 | Antimony | SW6010B | 6 | mg/kg | 0.86 | mg/kg |
| 4.5 | TPH (C8-C11) | SW8015B | 207,000 J | µg/kg | 1,000 | µg/kg |
| 4.5 | TPH (C11-C14) | SW8015B | 1,900,000 | µg/kg | 5,000 | µg/kg |
| 4.5 | TPH (C14-C20) | SW8015B | 741,000 | µg/kg | 5,000 | µg/kg |
| 9.5 | Antimony | SW6010B | 7 | mg/kg | 0.86 | mg/kg |
| 9.5 | TPH (C8-C11) | SW8015B | 2,420,000 J | µg/kg | 1,000 | µg/kg |
| 9.5 | TPH (C11-C14) | SW8015B | 10,700,000 | µg/kg | 5,000 | µg/kg |
| 9.5 | TPH (C14-C20) | SW8015B | 2,850,000 J | µg/kg | 5,000 | µg/kg |

Notes:
J = estimated detected value
µg/kg = microgram(s) per kilogram
mg/kg = milligram(s) per kilogram
TPH = total petroleum hydrocarbons

The boring log for ABBS1018 documented the soil as moist, loose, silty sand from ground surface to 10 feet bgs. Due to the local variations in bedrock depth in this area, refusal depths were expected to range from 1 to 10 feet bgs at this location. Saturated soil was not encountered in this boring

## 5.3 Treatment Technology Descriptions

### 5.3.1 Soil Washing

Soil washing is a water-based, volume-reduction process whereby hazardous contaminants are extracted and concentrated into a small residual portion of the original volume using physical and chemical methods. The technology originated in the mining and ore enrichment industry, which has employed full-scale commercial soil washing techniques for decades. The time required to remediate a site using soil washing technology varies widely and processes are controlled by site-specific factors including soil types and contaminant properties. Therefore, bench scale testing remains a crucial element in the effective selection and application of soil washing technologies.

Most of the contaminants in soil typically are concentrated in the fines fraction (less than 74 microns in diameter), with progressively lower contaminant levels in the sand and gravel fractions. Consequently, a physical separation of the gravel, sand, and fines can be performed to minimize the amount of contaminated material. The separation is achieved by adding water to the soil to make a slurry, which liberates the particles from each other. This washing process also can remove soluble contaminants that can then be more readily treated in the liquid.

Washed coarse sand and gravel portions of the treated soil/sediment might be redeposited onsite as backfill if LUT values or QAPP RLs have been achieved for the COCs. Subsequently, the smaller volume of contaminated residual concentrate may be treated by other technologies as part of a “treatment train” process, depending on the contaminants and other factors. The following technologies are applicable:

- Thermal desorption
- Chemical oxidation
- Biodegradation
- Regulated disposal

The physical techniques that typically are employed by soil/sediment washing technologies include crushing and resizing, screening, wet classification, attrition scrubbing, dense media separation, heavy media separation, elutriation, dissolved air flotation, gravity separation, and mechanical dewatering. Associated chemical additives include detergents, surfactants, chelating agents, solvents, coagulants, flocculants, and pH adjustment chemicals.

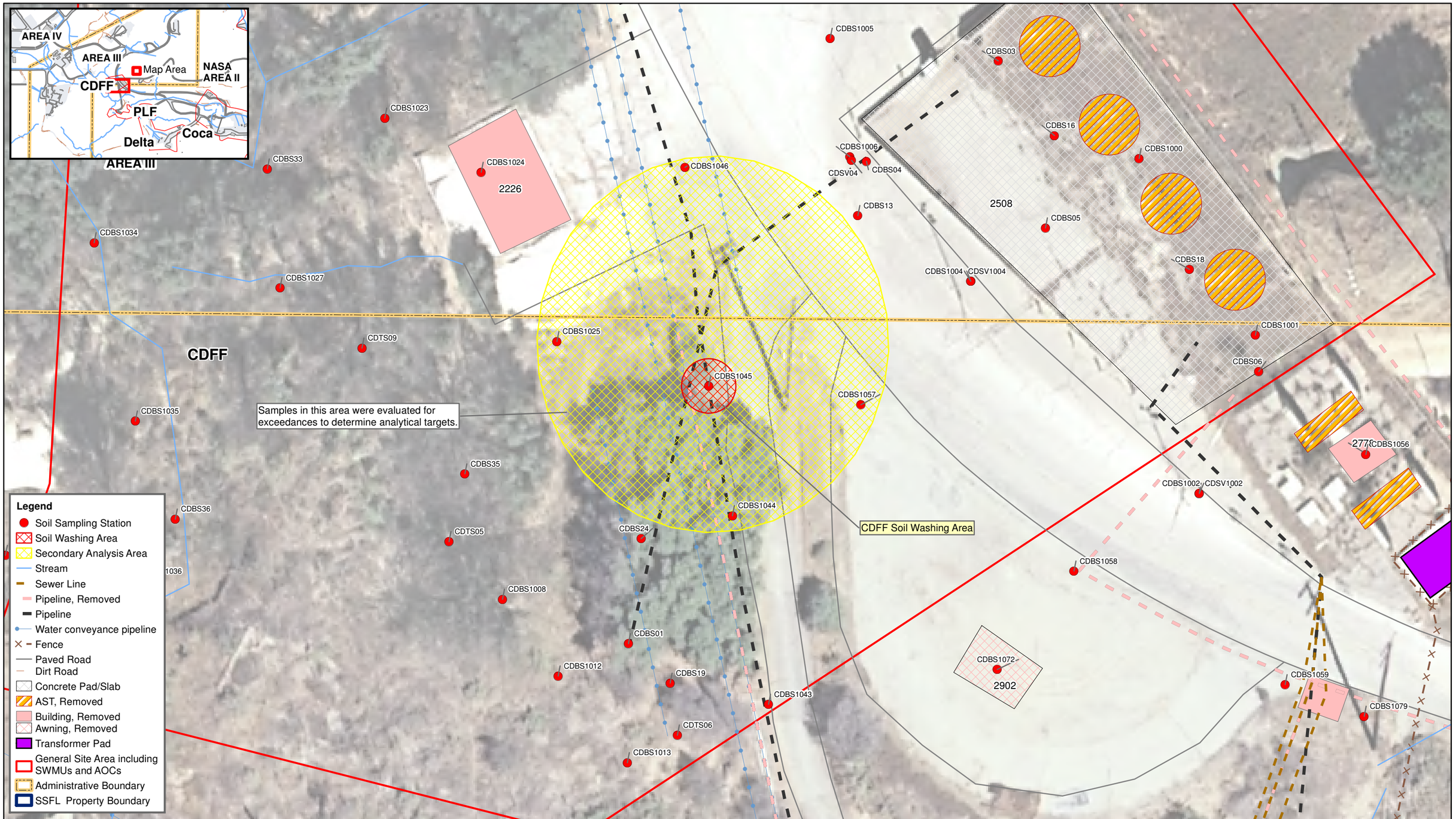
The physical techniques that typically are employed by soil/sediment washing technologies include crushing and resizing, screening, wet classification, attrition scrubbing, dense media separation, heavy media separation, elutriation, dissolved air flotation, gravity separation, and mechanical dewatering. Associated chemical additives include detergents, surfactants, chelating agents, solvents, coagulants, flocculants, and pH adjustment chemicals.

### 5.3.2 Thermal Desorption

Thermal desorption is a destructive technology in which the excavated soil is treated onsite and replaced after COC concentration reduction. Like soil washing, thermal desorption is a treatment process that reduces the volume of waste generated for offsite transportation and disposal. In turn, a reduction in cost and environmental impact is frequently associated with this technology. The time required to remediate a site by thermal desorption is dependent on soil type, moisture content, the specific contaminants present, and the concentrations of those contaminants. Bench scale tests are therefore required before technology implementation. Additionally, test results are beneficial in supporting multiple aspects of feasibility study requirements.

The process concept involves ex situ remediation via heating soil in a chamber to temperatures that desorb, volatilize, or destroy organic contaminants. Contaminants volatilized from the soil are transported as vapor to a treatment system, where they are captured, condensed, or destroyed. Thermal desorption can be used at low temperatures ranging from approximately 150 to nearly 400°C to treat volatile organic compounds (VOCs), some petroleum hydrocarbons, and semivolatile organic compounds (SVOCs). High temperatures ranging from nearly

400°C to just under 550°C are used to treat refractory petroleum hydrocarbons, SVOCs, PAHs, PCBs, and pesticides (EPA, 2004).




17-Dec-2013
Drawn By:
A. Cooley

**Figure 5-1**
**Coca/Delta Fuel Farm - Soil Washing Area**
**Soil Treatability Studies Summary NASA SSFL, Ventura County, California**

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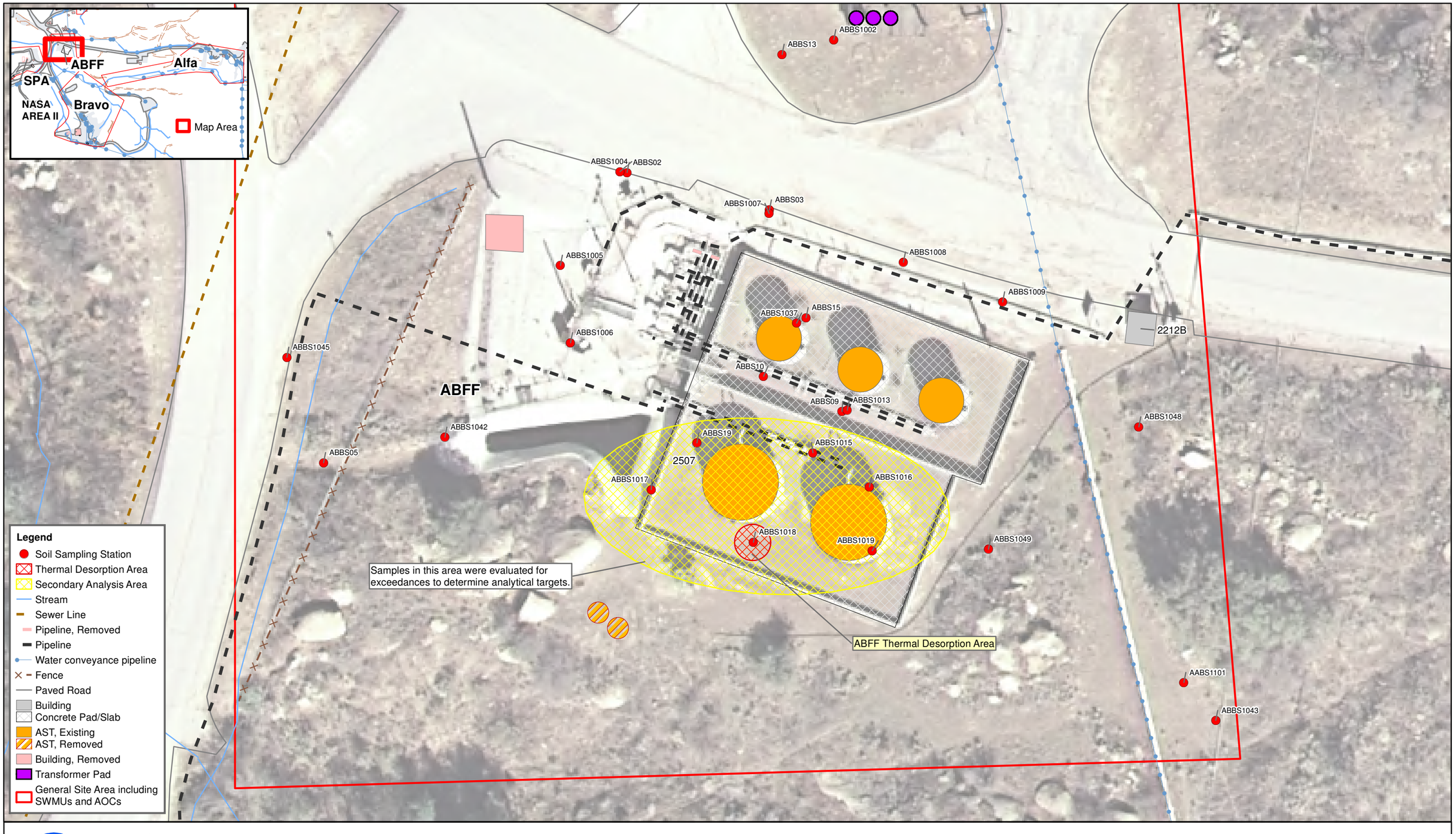


**Figure 5-2**
**Alfa/Bravo Fuel Farm - Thermal Desorption Area**
**Soil Treatability Studies Summary**
**NASA SSFL, Ventura County, California**

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SECTION 6

# Bench Scale Project Approach

This section summarizes the rationale and performance goals for the bench scale TS efforts. It also discusses the procedures, sampling, and analyses involved with the bench scale TS components and includes an overview of the deviations from the approved work plan (NASA, 2014b) that were incurred in completing the project. Section 6.1 discusses the soil washing bench scale TS conducted on contaminated soil from the CDFF and Section 6.2 discusses for the thermal desorption bench scale TS conducted on contaminated soil from the ABFF.

## 6.1 Soil Washing Implementation

### 6.1.1 Test Objectives and Rationale

The objective of the soil washing bench scale TS was to determine if it can meet AOC cleanup requirements and evaluate the treatment effectiveness and implementability of this technology as an alternative to offsite transportation and disposal of contaminated soil. If effective in reducing contaminant concentrations in soil to below screening levels, this technology application may be considered during the Feasibility Study for implementation at applicable sites within SSFL.

#### 6.1.1.1 Performance Objectives

Specific project performance objectives included the following:

- Evaluate whether soil washing can reduce COC concentrations to LUT values or QAPP RLs.
- Document reductions in COC concentrations in the various soil fractions and compare concentration results to the LUT values or QAPP RLs.
- If LUT values or QAPP RLs cannot be achieved, evaluate whether soil washing can reduce COC concentrations to EPA Region 9 regional screening levels (RSLs) for residential or industrial scenarios, or standardized risk assessment methodology (SRAM) risk-based screening level (RBSLs) for residential, recreational, or industrial risk scenarios.
- Assess the efficacy of soil washing.
- Summarize the results of the soil washing bench scale TS.
- Define the process conditions requisite to achieve LUT values or QAPP RLs, Region 9 RSLs, and SRAM RBSLs to assess the cost, feasibility, and implementability of soil washing as a full-scale remedial alternative.

Table 6-1 shows the LUT values or QAPP RLs, Region 9 RSLs, and SRAM RBSLs for COCs present in samples from soil boring CDBS1045.

TABLE 6-1
**Summary of Screening Values for Contaminants of Concern at Soil Boring CDBS1045**
*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Parameter Name | Units | LUT Value or QAPP RL | EPA Region 9 Residential Soil RSL | EPA Region 9 Industrial Soil RSL | SRAM Residential Soil RBSL | SRAM Industrial Soil RBSL | SRAM Recreational Soil RBSL |
|---|---|---|---|---|---|---|---|
| Aroclor-1254 | µg/kg | 17 | 0.11 | 0.74 | 0.23 | 2 | 0.56 |
| Dieldrin | µg/kg | 0.48 | 0.03 | 0.11 | 0.04 | 0.30 | 0.12 |
| Endosulfan Sulfate | µg/kg | 0.48 | NC | NC | 410 | 8,200 | 1,900 |
| Silver | mg/kg | 0.2 | 39 | 510 | 230 | 4,700 | 1,100 |
| TPH (C20-C30) | µg/kg | 5,000 | NC | NC | 90,000 | 900,000 | 535,000 |
| TPH (C31-C40) | µg/kg | 10,000 | NC | NC | 180,000 | 1,800,000 | 1,070,000 |
| TPH (C8-C40) | µg/kg | 10,000 | NC | NC | NC | NC | NC |
| DIOXTEQ | pg/g | 0.912 | NC | NC | 4.8 | 33 | 18 |

Notes:
µg/kg = microgram(s) per kilogram
DIOXTEQ = dioxin toxic equivalency
EPA = U.S. Environmental Protection Agency
LUT = Look-Up Table
mg/kg = milligram(s) per kilogram
NC = no criteria
pg/g = picogram(s) per gram
QAPP = Quality Assurance Project Plan
RBSL = risk-based screening level
RL = reporting limit
RSL = regional screening level
SRAM = standardized risk assessment methodology
TPH = total petroleum hydrocarbons

### 6.1.2 Soil Collection

Soil was collected from a location adjacent to boring CDBS1045. A direct-push technology (DPT) drill rig was used to collect continuous soil cores to a total target depth of 11 feet bgs. Upon collection, the soil cores were segregated into two portions by depth: ground surface to 5 feet bgs and 5 to 11 feet bgs. The field crew collected approximately 25 kilograms (kg) of soil from each of the target depth intervals. The soil was screened in the field to remove material greater than 2 inches in diameter, as well as obvious debris or vegetative materials. The soil was containerized per depth, sealed, and shipped to Hazen to conduct the bench scale test in accordance with the project work plan (NASA, 2014b).

### 6.1.3 Soil Washing Procedures

The soil washing bench scale TS was designed to mirror a full-scale process, as shown by the flow diagram on Figure 6-1. Hazen's soil washing report with a photographic log of the soil washing test is included in Appendix A.

The soil washing process segregated the COCs into three fractions: 1) fine silt, clay, and a colloidal dewatered fraction with high COC affinity due to large comparative particle surface areas and high cationic exchange capacity; 2) organic material (leaves, twigs, roots, decayed vegetation, insects, etc.) with high COC affinity due to high carbon adsorptive capacity; and 3) process wash water with solubilized COCs (organics and inorganics) to be treated or removed. Once these three factions were segregated, supplemental technologies were applied on the smaller, more concentrated material, as appropriate.

Two different surfactants (Citrikleen and BioSolve) were added to the soil washing process water to act as surface-wetting agents, enhance solvent properties of the wash water, and better penetrate the clumpy clay-type materials. The testing approach allowed for a direct comparison of soil washing effectiveness with process water only, process water plus Citrikleen, and process water plus BioSolve.

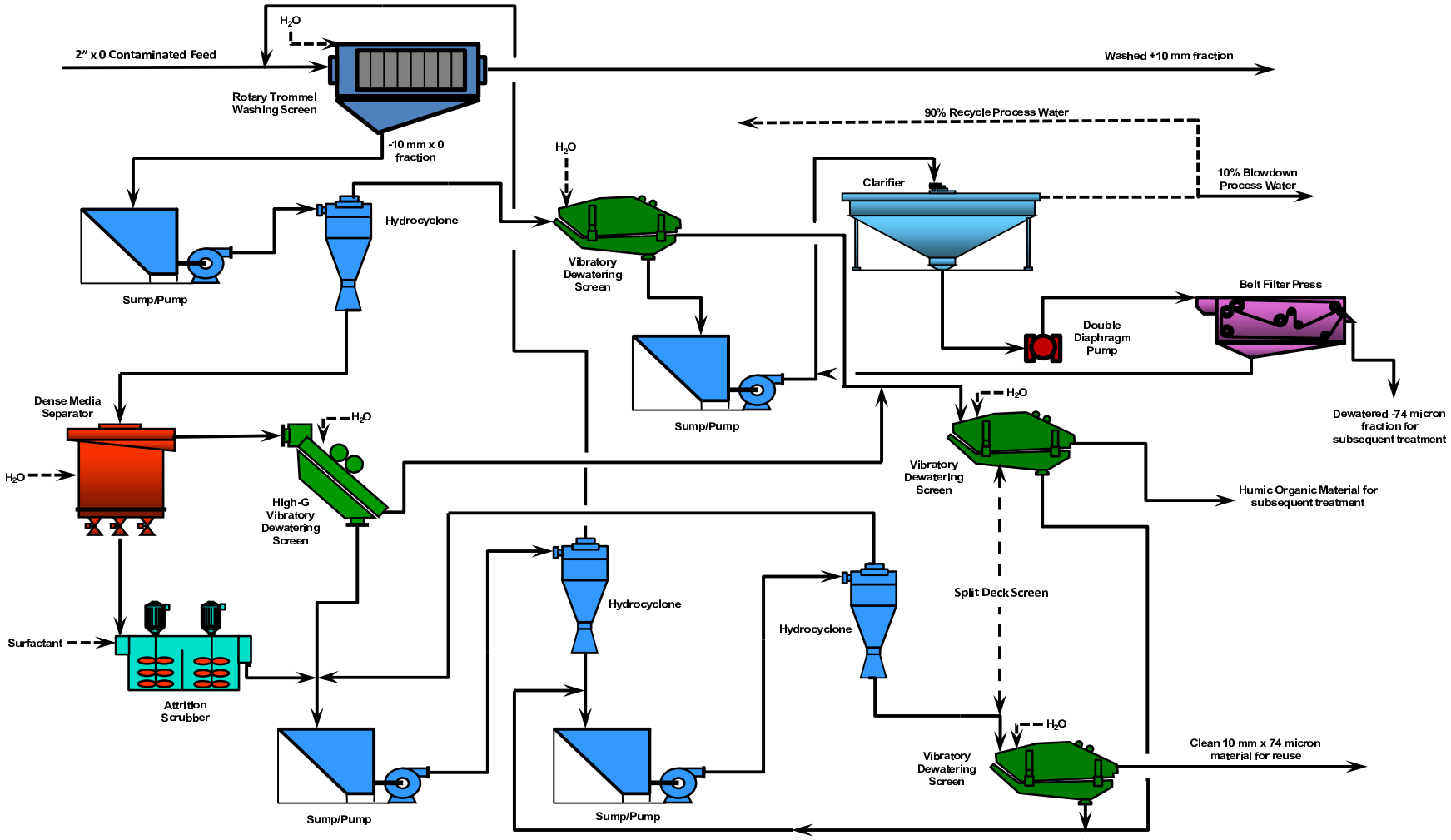


Figure 6-1
Soil Washing Process Summary
Soil Treatability Studies Summary
NASA SSFL, Ventura County, California

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Bench scale testing was performed using the basis anticipated for a full-scale process at the site. Contaminated soil was first screened to remove oversize coarse factions containing +3/8-inch gravel and stones. The -3/8-inch factions were then further divided for additional testing, and soil from each depth underwent wet sieve screening, dry sieve screening, and bulk screening. Soil was wet sieve screened at 9 Tyler mesh, 200 mesh, and less than 200 mesh; dry sieve screened at 9 Tyler mesh and 200 mesh; and bulk screened at 200 mesh and less than 200 mesh. Untreated head samples of the +3/8-inch faction, -3/8-inch faction, and each screened faction were sent for analyses for baseline concentrations.

Additional for each depth was used for trommel scrubbing, elutriation, and attrition scrubbing. Trommel scrubbing was performed by placing aliquots of soil in plastic bottles along with deionized water, a Citrikleen solution, or a BioSolve solution. The plastic bottles were then agitated over a roller table to promote surface-to-surface contact. Upon completion, the samples were filtered and screened at 200 mesh. Trommel scrubbed soil samples were collected for 200 mesh from the water only, Citrikleen solution, and BioSolve solution and submitted for analyses. Because of a lack of soil volume, the less than 200 mesh trommel scrubbed samples were held and combined with the less than 200 mesh attrition scrubbed samples. Details of the trommel scrubbing tests can be found in the Hazen Soil Washing Report in Appendix A.

Following the initial screening at 200 mesh, a portion of soil was placed in a dense media separator (DMS) for elutriation. The addition of clean water to the DMS carried fine humic material (such as leaves and twigs) upward for dewatering by a High-G vibratory screen (Appendix A). Soil was further screened at 20 and 48 Tyler mesh, and separated to decrease the fine sands in the overflow faction. An elutriation sample was collected at -3/8-inch by 200 mesh and submitted for analyses. The underflow soil fractions were composited and used to conduct the attrition scrubbing.

The attrition scrubbing was performed using the soil fractions taken from the underflow of the elutriation tests. Aliquots of soil were placed in plastic bottles along with deionized water, a Citrikleen solution, or a BioSolve solution. The plastic bottles were then agitated on a roller table to promote surface-to-surface contact that liberated the remaining fine clay fractions. Upon completion, the samples were filtered and screened at 200 mesh. Attrition scrubbed soil samples were collected for 200 mesh from the water only, Citrikleen solution, and BioSolve solution and submitted for analyses. Because of a lack of soil volume, the less than 200 mesh attrition scrubbed samples were combined with the less than 200 mesh trommel scrubbed samples and submitted for analyses.

The untreated head samples and treated soil samples were analyzed for the target COCs and the results were compared to baseline concentrations, LUT values or QAPP RLs, EPA Region 9 RSLs, and SRAM RBSLs to assess treatment effectiveness.

### 6.1.4 Sample Analyses

Hazen shipped soil samples during various stages of the soil washing process to a contracted laboratory (CalScience) for analysis of the following target COCs:

- TPH by EPA Method 8015B
- Aroclor-1254 by EPA Method 8082
- Endosulfan sulfate and dieldrin by EPA Method 8081
- Silver by EPA Method 6010
- Dioxins by EPA Method 8290

During the bench scale test, process evaluation was conducted by collecting representative samples from the various stages of the soil washing cycle as summarized in Table 6-2. The materials produced during size fractionation and corresponding water phases were analyzed for the target COCs by the analytical methods listed above. As defined by the project work plan (NASA, 2014b), analytical results were compared to baseline conditions, LUT values and QAPP RLs, EPA Region 9 RSLs, and SRAM RBSLs to assess treatment effectiveness.

TABLE 6-2
**Summary of Samples Collected for Soil Washing**
*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Sample Identification | Depth (feet bgs) | Soil Washing Test | Description | Fraction Size | Analytes |
|---|---|---|---|---|---|
| CDBS1045S101 | 0–5 | Untreated Head Sample | Overall Head Sample | +3/8 inch | TS, pH, metals, pesticides, TPH, aroclors |
| CDBS1045S102 | 0–5 | Untreated Head Sample | Overall Head Sample | -3/8 inch | TS, pH, metals, pesticides, TPH, aroclors |
| CDBS1045S104 | 0–5 | Untreated Head Sample | Wet Sieve | 9 Tyler mesh | TS, metals, TPH, dioxins, aroclors |
| CDBS1045S105 | 0–5 | Untreated Head Sample | Wet Sieve | 200 mesh | TS, TOC, moisture, metals, pesticides, TPH, dioxins, aroclors |
| CDBS1045S106 | 0–5 | Untreated Head Sample | Wet Sieve | < 200 mesh | TS, TOC, moisture, metals, pesticides, TPH, dioxins, aroclors |
| CDBS1045S108 | 0–5 | Untreated Head Sample | Dry Sieve | 9 Tyler mesh | TS, moisture, metals, TPH, aroclors |
| CDBS1045S109 | 0–5 | Untreated Head Sample | Dry Sieve | 200 mesh | TS, TOC, moisture, metals, pesticides, TPH, dioxins, aroclors |
| CDBS1045S111 | 0–5 | Untreated Head Sample | Bulk Screening | 200 mesh | TS, TOC, moisture, metals, pesticides, TPH, dioxins, aroclors |
| CDBS1045S112 | 0–5 | Untreated Head Sample | Bulk Screening | < 200 mesh | TS, TOC, moisture, metals, pesticides, TPH, dioxins, aroclors |
| CDBS1045S113 | 0–5 | Trommel Scrubbed | w/o amendments | 200 mesh | TS, TOC, moisture, metals, pesticides, TPH, dioxins, aroclors |
| CDBS1045S115 | 0–5 | Trommel Scrubbed | Citrikleen | 200 mesh | TS, TOC, moisture, metals, pesticides, TPH, dioxins, aroclors |
| CDBS1045S117 | 0–5 | Trommel Scrubbed | BioSolve | 200 mesh | TS, TOC, moisture, metals, pesticides, TPH, dioxins, aroclors |
| CDBS1045S114 | 0–5 | Trommel and Attrition Scrubbed, Combined | w/o amendments | < 200 mesh | TS, TOC, moisture, metals, pesticides, TPH, dioxins, aroclors |
| CDBS1045S116 | 0–5 | Trommel and Attrition Scrubbed, Combined | Citrikleen | < 200 mesh | TS, TOC, moisture, metals, pesticides, TPH, dioxins, aroclors |
| CDBS1045S118 | 0–5 | Trommel and Attrition Scrubbed, Combined | BioSolve | < 200 mesh | TS, metals, pesticides, TPH, aroclors |
| CDBS1045S119 | 0–5 | Elutriation Sample | humic material | -3/8 inch x 200 mesh | TS, TOC, moisture, TPH |
| CDBS1045S120 | 0–5 | Attrition Scrubbed | w/o amendments | 200 mesh | TS, TOC, moisture, metals, pesticides, TPH, dioxins, aroclors |
| CDBS1045S122 | 0–5 | Attrition Scrubbed | Citrikleen | 200 mesh | TS, TOC, moisture, metals, pesticides, TPH, dioxins, aroclors |
| CDBS1045S124 | 0–5 | Attrition Scrubbed | BioSolve | 200 mesh | TS, TOC, moisture, metals, pesticides, TPH, dioxins, aroclors |
| CDBS1045S201 | 5–11 | Untreated Head Sample | Overall Head Sample | +3/8 inch | TS, pH, TOC, moisture, pesticides, TPH |
| CDBS1045S202 | 5–11 | Untreated Head Sample | Overall Head Sample | -3/8 inch | TS, pH, TOC, moisture, pesticides, TPH |
| CDBS1045S204 | 5–11 | Untreated Head Sample | Wet Sieve | 9 Tyler mesh | TS, TPH (C4 – C12 only) |
| CDBS1045S205 | 5–11 | Untreated Head Sample | Wet Sieve | 200 mesh | TS, pesticides, TPH |

TABLE 6-2
**Summary of Samples Collected for Soil Washing**
*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Sample Identification | Depth (feet bgs) | Soil Washing Test | Description | Fraction Size | Analytes |
|---|---|---|---|---|---|
| CDBS1045S206 | 5–11 | Untreated Head Sample | Wet Sieve | < 200 mesh | TS, TOC, moisture, pesticides, TPH |
| CDBS1045S208 | 5–11 | Untreated Head Sample | Dry Sieve | 9 Tyler mesh | TS |
| CDBS1045S209 | 5–11 | Untreated Head Sample | Dry Sieve | 200 mesh | TS, TOC, moisture, pesticides, TPH |
| CDBS1045S211 | 5–11 | Untreated Head Sample | Bulk Screening | 200 mesh | TS, TOC, moisture, pesticides, TPH |
| CDBS1045S212 | 5–11 | Untreated Head Sample | Bulk Screening | < 200 mesh | TS, TOC, moisture, pesticides, TPH |
| CDBS1045S213 | 5–11 | Trommel Scrubbed Sample | w/o amendments | 200 mesh | TS, TOC, moisture, pesticides, TPH |
| CDBS1045S215 | 5–11 | Trommel Scrubbed Sample | Citrikleen | 200 mesh | TS, TOC, moisture, pesticides, TPH |
| CDBS1045S217 | 5–11 | Trommel Scrubbed Sample | BioSolve | 200 mesh | TS, TOC, moisture, pesticides, TPH |
| CDBS1045S214 | 5–11 | Trommel and Attrition Scrubbed, Combined | w/o amendments | < 200 mesh | TS, TOC, moisture, pesticides, TPH |
| CDBS1045S216 | 5–11 | Trommel and Attrition Scrubbed, Combined | Citrikleen | < 200 mesh | TS, pesticides, TPH |
| CDBS1045S218 | 5–11 | Trommel and Attrition Scrubbed, Combined | BioSolve | < 200 mesh | TS, TOC, moisture, pesticides, TPH |
| CDBS1045S219 | 5–11 | Elutriation Sample | humic material | -3/8 inch x 200 mesh | TS, TPH |
| CDBS1045S220 | 5–11 | Attrition Scrubbed Sample | w/o amendments | 200 mesh | TS, TOC, moisture, pesticides, TPH |
| CDBS1045S222 | 5–11 | Attrition Scrubbed Sample | Citrikleen | 200 mesh | TS, TOC, moisture, pesticides, TPH |
| CDBS1045S224 | 5–11 | Attrition Scrubbed Sample | BioSolve | 200 mesh | TS, TOC, moisture, pesticides, TPH |

Notes:
bgs = below ground surface
TOC = total organic carbon
TPH = total petroleum hydrocarbons
TS = total solids
w/o = without

### 6.1.5 Deviations from Work Plan

Implementation of the soil washing bench scale TS was in general agreement with the approved work plan for the project (NASA, 2014b). The only notable deviations from the work plan involved the reduction in the number of analyses that were planned as a result of sampling volume restrictions. In general, the limited sample volume generated during bench scale testing led to three types of deviation from the approved work plan:

- No analyses performed
- Restricted list of analyses performed
- Samples from separate steps were combined to achieve sufficient volume for analyses

Table 6-3 provides details of the samples and analyses proposed in the work plan and the deviations that resulted from insufficient soil volumes.

## 6.2 Thermal Desorption Implementation

### 6.2.1 Test Objectives and Rationale

The objective of the thermal desorption bench scale TS was to determine if it can meet AOC cleanup requirements and evaluate the treatment effectiveness and implementability of this technology as an alternative to offsite transportation and disposal of contaminated soil. If effective in reducing contaminant concentrations in soil to below screening levels, this technology application may be considered during the Feasibility Study for implementation at applicable sites within SSFL.

#### 6.2.1.1 Performance Objectives

Specific project performance objectives included the following:

- Evaluate whether thermal desorption can reduce COC concentrations to LUT values.
- Document reductions in COC concentrations in the various soil fractions and compare concentration results to the LUT values or QAPP RLs.
- If LUT values or QAPP RLs cannot be achieved, evaluate whether thermal desorption can reduce COC concentrations to EPA Region 9 RSLs for residential or industrial scenarios or SRAM RBSLs for residential, recreational, or industrial risk scenarios.
- Assess the efficacy of thermal desorption.
- Summarize the results of the thermal desorption bench scale TS.
- Define the process conditions requisite to achieve LUT values or QAPP RLs, Region 9 RSLs, and SRAM RBSLs to assess the cost, feasibility, and implementability of thermal desorption as a full-scale remedial alternative.

Table 6-4 shows the LUT values or QAPP RLs, Region 9 RSLs, and SRAM RBSLs for COCs present in samples from soil boring ABBS1018.

### 6.2.2 Soil Collection

Soil was collected from a location adjacent to boring ABBS1018 using a 4-inch-diameter hand auger. Soil retrieved from the hand auger was collected from the targeted depths and placed in a container for homogenization. Soil samples were segregated by depth into two containers, ground surface to 5 feet bgs and 5 to 10 feet bgs, to support subsequent laboratory evaluation of the technology. The containers were sealed and shipped to Hazen to conduct the bench scale test in accordance with the project work plan (NASA, 2014a).

TABLE 6-3
**Soil Washing Plan and Deviations**
*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| | | Planned Analyses | | | | | | | | Deviations | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | pH | % Moisture | TOC | TPH | Aroclor 1254 | Silver | Dioxin | Pesticides | Not analyzed | Additional Analyses | Comments |
| | Sample Identification | Sample #1 collected from 0–5 feet bgs | | | | | | | | | | All samples analyzed for silver included a full metals suite; all samples analyzed for Aroclor-1254 included a full aroclors suite. Dioxin samples were sent to a secondary lab so, depending on how the soil volume was split, there may not have always been enough volume for analyses. |
| **Untreated Head Sample - (+3/8-inch)** | **CDBS1045S101** | x | x | x | x | x | x | x | x | Moisture, TOC, and dioxins | TS | Insufficient volume for full analyses |
| **Untreated Head Sample - (-3/8-inch)** | **CDBS1045S102** | x | x | x | x | x | x | x | x | Moisture, TOC, and dioxins | TS | Insufficient volume for full analyses |
| **Untreated Head Sample - Wet Sieve (water only)** | | | | | | | | | | | | |
| 1/4-inch mesh (6.35 mm) | CDBS1045S103 | | | x | x | x | x | x | x | All--No sample submitted | | Very little volume of the larger fractions remained after sieving; only 3.71 grams of 1/4" mesh sample was collected, not enough for any analyses. |
| 9 Tyler mesh (2 mm) | CDBS1045S104 | | | x | x | x | x | x | x | TOC, pesticides | TS | 52.94 grams of sample were collected, not enough for complete analyses |
| 200 mesh (.074 mm) | CDBS1045S105<br>(CDBS1045D105) | | | x<br>x | x<br>x | x<br>x | x<br>x | x<br>x | x<br>x | | TS, moisture | |
| < 200 mesh (<.074 mm) filter cake | CDBS1045S106 | | | x | x | x | x | x | x | | TS, moisture | |
| **Untreated Head Sample - Dry Sieve** | | | | | | | | | | | | |
| 1/4-inch mesh (6.35 mm) | CDBS1045S107 | | | x | x | x | x | x | x | All--No sample submitted | | Very little volume of the larger fractions remained after sieving; only 7.97 grams of 1/4" mesh sample was collected, not enough for any analyses. |
| 9 Tyler mesh (2 mm) | CDBS1045S108 | | | x | x | x | x | x | x | TOC, dioxins, pesticides | TS, moisture | 73.13 grams of sample were collected, not enough for complete analyses |
| 200 mesh (.074 mm) | CDBS1045S109<br>(CDBS1045S109S) | | | x<br>x | x<br>x | x<br>x | x<br>x | x<br>x | x<br>x | | TS, moisture | |
| < 200 mesh (<.074 mm) filter cake | CDBS1045S110 | | | x | x | x | x | x | x | All--No sample submitted | | No fraction volume obtained at all |
| **Bulk Screening** | | | | | | | | | | | | |
| 200 mesh (.074 mm) | CDBS1045S111 | | | x | x | x | x | x | x | | TS, moisture | |
| < 200 mesh (<.074 mm) filter cake | CDBS1045S112 | | | x | x | x | x | x | x | | TS, moisture | |
| **Trommel Scrubbed Sample #1 without amendments** | | | | | | | | | | | | |
| 200 mesh (.074 mm) | CDBS1045S113 | | | x | x | x | x | x | x | | TS, moisture | |
| < 200 mesh (<.074 mm) filter cake | CDBS1045S114 | | | x | x | x | x | x | x | | TS, moisture | CDBS1045S121 was combined with CDBS1045S114 to create enough volume to run all analyses |
| **Trommel Scrubbed Sample #1 with Citrikleen** | | | | | | | | | | | | |
| 200 mesh (.074 mm) | CDBS1045S115 | | | x | x | x | x | x | x | | TS, moisture | |
| < 200 mesh (<.074 mm) filter cake | CDBS1045S116 | | | x | x | x | x | x | x | | TS, moisture | CDBS1045S123 was combined with CDBS1045S116 to create enough volume to run all analyses |
| **Trommel Scrubbed Sample #1 with Biosolve** | | | | | | | | | | | | |
| 200 mesh (.074 mm) | CDBS1045S117 | | | x | x | x | x | x | x | | TS, moisture | |
| < 200 mesh (<.074 mm) filter cake | CDBS1045S118 | | | x | x | x | x | x | x | TOC, dioxins | TS | CDBS1045S125 was combined with CDBS1045S118 to create enough volume to run some analyses |
| **Elutriation Sample #1** | | | | | | | | | | | | |
| -3/8-inch x 200 mesh humic material | CDBS1045S119 | | | x | x | x | x | x | x | Aroclors, metals, dioxins, pesticides | TS, moisture | 17.31 grams of sample were collected, not enough for complete analyses |
| **Attrition Scrubbed Sample #1 without amendments** | | | | | | | | | | | | |
| 200 mesh (.074 mm) | CDBS1045S120 | | | x | x | x | x | x | x | | TS, moisture | |
| < 200 mesh (<.074 mm) filter cake | CDBS1045S121 | | | x | x | x | x | x | x | All--No sample submitted | | Sample was combined with CDBS1045S114 due to lack of volume |
| **Attrition Scrubbed Sample #1 with Citrikleen** | | | | | | | | | | | | |
| 200 mesh (.074 mm) | CDBS1045S122 | | | x | x | x | x | x | x | | TS, moisture | |
| < 200 mesh (<.074 mm) filter cake | CDBS1045S123 | | | x | x | x | x | x | x | All--No sample submitted | | Sample was combined with CDBS1045S116 due to lack of volume |
| **Attrition Scrubbed Sample #1 with Biosolve** | | | | | | | | | | | | |
| 200 mesh (.074 mm) | CDBS1045S124 | | | x | x | x | x | x | x | | TS, moisture | |
| < 200 mesh (<.074 mm) filter cake | CDBS1045S125 | | | x | x | x | x | x | x | All--No sample submitted | | Sample was combined with CDBS1045S118 due to lack of volume |

TABLE 6-3
**Soil Washing Plan and Deviations**
*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| | | Planned Analyses | | | | | | | | Deviations | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | pH | % Moisture | TOC | TPH | Aroclor 1254 | Silver | Dioxin | Pesticides | Not analyzed | Additional Analyses | Comments |
| | Sample Identification | Sample #2 collected from 5–11 feet bgs | | | | | | | | | | |
| **Untreated Head Sample - (+3/8 inch)** | **CDBS1045S201** | x | x | x | x | | | | x | | TS | |
| **Untreated Head Sample - (-3/8 inch)** | **CDBS1045S202** | x | x | x | x | | | | x | | TS | |
| **Untreated Head Sample - Wet Sieve (water only)** | | | | | | | | | | | | |
| 1/4-inch mesh (6.35 mm) | CDBS1045S203 | | | x | x | | | | x | All--No sample submitted | | Very little volume of the larger fractions remained after sieving; only 0.64 grams of 1/4" mesh sample was collected, not enough for any analyses. |
| 9 Tyler mesh (2 mm) | CDBS1045S204 | | | x | x | | | | x | TOC, most TPH, pesticides | TS | 6.66 grams of sample were collected, only enough for TPH C4 - C12 analyses |
| 200 mesh (.074 mm) | CDBS1045S205 | | | x | x | | | | x | TOC | TS | Insufficient volume for full analyses |
| < 200 mesh (<.074 mm) filter cake | CDBS1045S206 | | | x | x | | | | x | | TS, moisture | |
| **Untreated Head Sample - Dry Sieve** | | | | | | | | | | | | |
| 1/4-inch mesh (6.35 mm) | CDBS1045S207 | | | x | x | | | | x | All--No sample submitted | | Very little volume of the larger fractions remained after sieving; not enough for any analyses. |
| 9 Tyler mesh (2 mm) | CDBS1045S208 | | | x | x | | | | x | TOC, TPH, pesticides | TS | 17.31 grams of sample were collected, not enough for complete analyses |
| 200 mesh (.074 mm) | CDBS1045S209 | | | x | x | | | | x | | TS, moisture | |
| < 200 mesh (<.074 mm) filter cake | CDBS1045S210 | | | x | x | | | | x | All--No sample submitted | | No fraction volume obtained at all |
| **Bulk Screening** | | | | | | | | | | | | |
| 200 mesh (.074 mm) | CDBS1045S211 | | | x | x | | | | x | | TS, moisture | |
| < 200 mesh (<.074 mm) filter cake | CDBS1045S212 | | | x | x | | | | x | | TS, moisture | |
| **Trommel Scrubbed Sample #2 without amendments** | | | | | | | | | | | | |
| 200 mesh (.074 mm) | CDBS1045S213 | | | x | x | | | | x | | TS, moisture | |
| < 200 mesh (<.074 mm) filter cake | CDBS1045S214 | | | x | x | | | | x | | TS, moisture | CDBS1045S221 was combined with CDBS1045S214 to create enough volume to run all analyses |
| **Trommel Scrubbed Sample #2 with Citrikleen** | | | | | | | | | | | | |
| 200 mesh (.074 mm) | CDBS1045S215 | | | x | x | | | | x | | TS, moisture | |
| < 200 mesh (<.074 mm) filter cake | CDBS1045S216 | | | x | x | | | | x | TOC | TS | CDBS1045S223 was combined with CDBS1045S216 to create enough volume to run some analyses |
| **Trommel Scrubbed Sample #2 with Biosolve** | | | | | | | | | | | | |
| 200 mesh (.074 mm) | CDBS1045S217 | | | x | x | | | | x | | TS, moisture | |
| < 200 mesh (<.074 mm) filter cake | CDBS1045S218 | | | x | x | | | | x | | TS, moisture | CDBS1045S225 was combined with CDBS1045S218 to create enough volume to run all analyses |
| **Elutriation Sample #2** | | | | | | | | | | | | |
| -3/8-inch x 200 mesh humic material | CDBS1045S219 | | | x | x | | | | x | TOC, pesticides | TS | Insufficient volume for full analyses |
| **Attrition Scrubbed Sample #2 without amendments** | | | | | | | | | | | | |
| 200 mesh (.074 mm) | CDBS1045S220 | | | x | x | | | | x | | TS, moisture | |
| < 200 mesh (<.074 mm) filter cake | CDBS1045S221 | | | x | x | | | | x | All--No sample submitted | | Sample was combined with CDBS1045S214 due to lack of volume |
| **Attrition Scrubbed Sample #2 with Citrikleen** | | | | | | | | | | | | |
| 200 mesh (.074 mm) | CDBS1045S222 | | | x | x | | | | x | | TS, moisture | |
| < 200 mesh (<.074 mm) filter cake | CDBS1045S223 | | | x | x | | | | x | All--No sample submitted | | Sample was combined with CDBS1045S216 due to lack of volume |
| **Attrition Scrubbed Sample #2 with Biosolve** | | | | | | | | | | | | |
| 200 mesh (.074 mm) | CDBS1045S224 | | | x | x | | | | x | | TS, moisture | |
| < 200 mesh (<.074 mm) filter cake | CDBS1045S225 | | | x | x | | | | x | All--No sample submitted | | Sample was combined with CDBS1045S218 due to lack of volume |
| **Composited Washwater Supernatant** | **CDLS1045S201** | x | | x | x | x | x | x | x | | | |

Notes:
bgs = below ground surface
mm = millimeter(s)
TOC = total organic carbon
TPH = total petroleum hydrocarbon

### 6.2.3 Thermal Desorption Procedures

The thermal desorption bench scale TS was designed to mirror a full-scale process, as shown by the flow diagram on Figure 6-2. Physical and thermal characteristics of the soil were evaluated, and those characteristics established the operating conditions under which the soil was routed in batches through a rotary kiln using indirect heat to treat the soil. The thermal desorption bench scale processing system included a heated and inert atmospheric gas stream to desorb and volatilize organic contaminants from the test soil. The gas stream was conveyed to a collection cell, where the contaminants were separated by their respective boiling points. Hazen's thermal desorption report with a photographic log of the thermal desorption test is included in Appendix B.

To provide a baseline concentration profile for evaluating treatment effectiveness, soil from each depth interval was mixed thoroughly and representative samples were analyzed for the target COCs. During the bench scale test, the soil was heated in a 4-inch-diameter batch kiln system to 250°C (low temperature) and 550°C (high temperature) with retention times of 15 and 30 minutes. Following the heating process, the treated soil samples were analyzed for the target COCs. Analytical results were compared to baseline concentrations, LUT values or QAPP RLs, EPA Region 9 RSLs, and SRAM RBSLs to assess treatment effectiveness in accordance with the approved work plan (NASA, 2014b).

TABLE 6-4
**Summary of Screening Values for Contaminants of Concern at Soil Boring ABBS1018**
*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Parameter Name | Units | LUT Value or QAPP RL | EPA Region 9 Residential Soil RSL | EPA Region 9 Industrial Soil RSL | SRAM Residential Soil RBSL | SRAM Industrial Soil RBSL | SRAM Recreational Soil RBSL |
|---|---|---|---|---|---|---|---|
| Antimony | mg/kg | 0.86 | 3.1 | 41 | 26 | 530 | 120 |
| TPH (C8-C11) | µg/kg | 1,000 | NC | NC | 55 | 317 | 581 |
| TPH (C11-C14) | µg/kg | 5,000 | NC | NC | 55 | 317 | 581 |
| TPH (C14-C20) | µg/kg | 5,000 | NC | NC | 55 | 317 | 581 |

Notes:
µg/kg = microgram(s) per kilogram
COC = contaminant of concern
EPA = U.S. Environmental Protection Agency
LUT = Look-Up Table
mg/kg = milligram(s) per kilogram
NC = no criteria
QAPP = Quality Assurance Project Plan
RBSL = risk-based screening level
RL = reporting limit
RSL = regional screening level
SRAM = standardized risk assessment methodology
TPH = total petroleum hydrocarbons

### 6.2.4 Sample Analyses

Samples collected during the thermal desorption TS were submitted for laboratory analysis of the target COCs:

- TPH by EPA Method 8015B
- Antimony by EPA Method 6010

Samples were collected pre-treatment (baseline sample), at 250°C after 15 minutes, 250°C after 30 minutes, 550°C after 15 minutes, and 550°C after 30 minutes, as summarized in Table 6-5.

TABLE 6-5
**Summary of Samples Collected for Thermal Desorption**
*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Sample Identification | Descriptions | Depth (feet bgs) | Temperature (°C) | Retention Time (minutes) | Sample Date | Analyte |
|---|---|---|---|---|---|---|
| ABBS1018S101 | 0 to 5 untreated | 0 - 5 | -- | -- | 5/14/2014 | Antimony, TPH, Total Solids |
| ABBS1018S102 | 0 to 5 batch 1 low retention time | 0 - 5 | 250 | 15 | 5/23/2014 | Antimony, TPH, Total Solids |
| ABBS1018S103 | 0 to 5 batch 1 high retention time | 0 - 5 | 250 | 30 | 5/23/2014 | Antimony, TPH, Total Solids |
| ABBS1018D103 | 0 to 5 batch 1 high retention time -- duplicate | 0 - 5 | 250 | 30 | 5/23/2014 | Antimony, TPH, Total Solids |
| ABBS1018S104 | 0 to 5 batch 2 low retention time | 0 - 5 | 500 | 15 | 5/23/2014 | Antimony, TPH, Total Solids |
| ABBS1018S105 | 0 to 5 batch 2 high retention time | 0 - 5 | 500 | 30 | 5/27/2014 | Antimony, TPH, Total Solids |
| ABBS1018S201 | 5 to 10 untreated | 5 - 10 | -- | -- | 5/15/2014 | Antimony, TPH, Total Solids |
| ABBS1018S202 | 5 to 10 batch 1 low retention time | 5 - 10 | 250 | 15 | 5/28/2014 | Antimony, TPH, Total Solids |
| ABBS1018S203 | 5 to 10 batch 1 high retention time | 5 - 10 | 250 | 30 | 5/28/2014 | Antimony, TPH, Total Solids |
| ABBS1018S203MS | 5 to 10 batch 1 high retention time -- MS | 5 - 10 | 250 | 30 | 5/28/2014 | Antimony, TPH |
| ABBS1018S203SD | 5 to 10 batch 1 high retention time -- MSD | 5 - 10 | 250 | 30 | 5/28/2014 | Antimony, TPH |
| ABBS1018S204 | 5 to 10 batch 2 low retention time | 5 - 10 | 500 | 15 | 5/28/2014 | Antimony, TPH, Total Solids |
| ABBS1018S205 | 5 to 10 batch 2 high retention time | 5 - 10 | 500 | 30 | 5/29/2014 | Antimony, TPH, Total Solids |

Notes:
°C = degrees Celsius
bgs = below ground surface
MS = matrix spike
MSD = matrix spike duplicate
TPH = total petroleum hydrocarbons

### 6.2.5 Deviations from Work Plan

Implementation of the thermal desorption bench scale TS was in general agreement with the approved work plan for the project (NASA, 2014b). There were no notable deviations from the work plan.

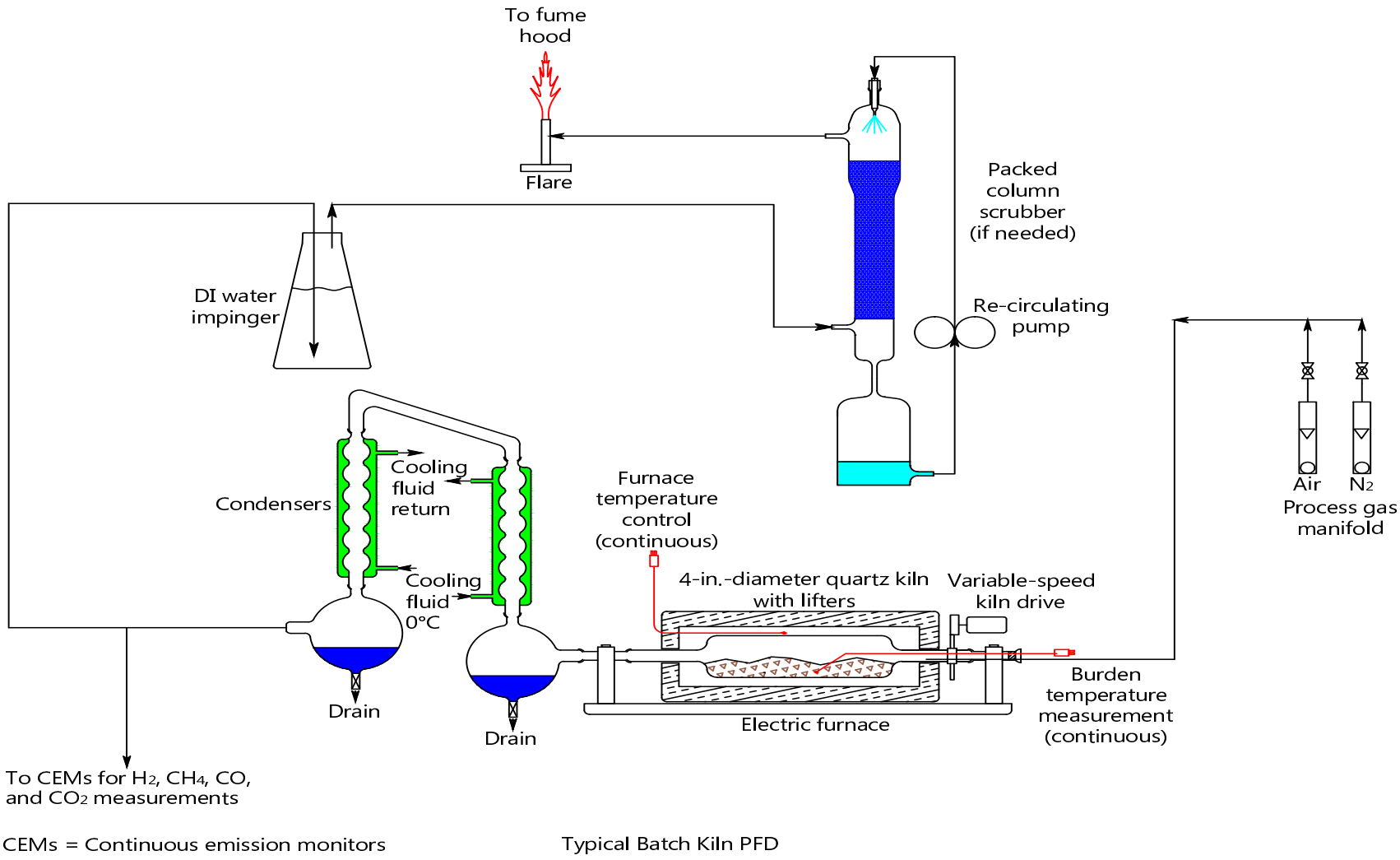


Figure 6-2
Thermal Desorption Process Summary
Soil Treatability Studies Summary
NASA SSFL, Ventura County, California

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SECTION 7

# Bench Scale Results and Discussion

This section summarizes the bench scale analytical results for the TS efforts and compares the results with the goals and objectives relevant to each of the TS components. Section 7.1 presents the information for the soil washing bench scale TS conducted on contaminated soil from the CDFF. Section 7.2 presents the information for the thermal desorption bench scale TS conducted on contaminated soil from the ABFF.

## 7.1 Soil Washing – Coca/Delta Fuel Farm

### 7.1.1 Data Analysis and Interpretation

The reduction in COC concentrations achieved by soil washing was evaluated in two ways. First, percentage reductions in COC concentrations for post-treatment samples were calculated for water only, water plus Citrikleen, and water plus BioSolve. Second, the post-treatment COC concentrations were compared to LUT values or QAPP RLs, EPA Region 9 RSLs, and SRAM RBSLs. These evaluations were performed to determine if it can meet AOC cleanup requirements and to assess the effectiveness of this technology for treatment of contaminated soil at SSFL and to determine if this technology can provide an acceptable alternative to offsite disposal. Tables 7-1 and 7-2 provide the soil washing bench scale analytical data for soil collected in the study area from 0 to 5 feet bgs and 5 to 11 feet bgs, respectively. Appendix C contains the analytical data for the soil washing bench scale TS.

#### 7.1.1.1 Post-Treatment COC Concentrations — Comparison to Pre-Treatment Concentrations

Post-treatment samples for soil collected from 0 to 5 feet bgs included elutriated samples at -3/8 inch by 200 mesh, trommel scrubbed samples at 200 mesh, attrition scrubbed samples at 200 mesh, and trommel and attrition scrubbed sampled combined (due to lack of sample volume) at less than 200 mesh. The post-treatment contaminant concentrations were compared to the baseline concentrations from wet sieve head samples at 200 mesh and less than 200 mesh, dry sieve head samples at 200 mesh, and bulk screening samples at 200 mesh and less than 200 mesh. Two initial untreated head samples at +3/8 inch and -3/8 inch were collected prior to any further sorting, and dry sieve and wet sieve samples also were collected at 9 Tyler mesh; although these results are shown on Table 7-1, there is no percent reduction comparison since no post-treatment samples were collected at 9 Tyler mesh. The -3/8-inch untreated head sample can be compared to only the -3/8 inch by 200 mesh elutriation sample. Based on Tables 7-1, 7-2, and 7-3, the following observations were made regarding the percentage reduction of COC concentrations in the post-treatment samples:

- **Water Only, without amendments — 200 mesh**
  - Dioxins, represented by the dioxin toxic equivalency (DIOXTEQ) were found in the trommel scrubbed post-treatment sample at a concentration of 1.56 pg/g, a reduction of 39.5 percent compared to the untreated wet sieve sample (2.58 pg/g), a reduction of 86 percent compared to the untreated dry sieve sample (11.11 pg/g), and a reduction of 53.7 percent compared to the untreated bulk screening sample (3.37 pg/g). DIOXTEQ was found in the attrition scrubbed post-treatment sample at a concentration of 1.51 pg/g, a reduction of 41.5 percent compared to the untreated wet sieve sample, a reduction of 86.4 percent compared to the untreated dry sieve sample, and a reduction of 55.2 percent compared to the untreated bulk screening sample.
  - TPH carbon range C21-C30 was found in the trommel scrubbed post-treatment sample at an estimated concentration of 3.7 micrograms per kilogram (µg/kg), a reduction of 85.2 percent compared to the untreated dry sieve sample (25 µg/kg) and a reduction of 41.3 percent compared to the untreated bulk screening sample (6.3 µg/kg). TPH C21-C30 was not detected in the attrition scrubbed post-treatment sample or in the untreated wet sieve sample.

  - TPH carbon range C30-C40 was found in the trommel scrubbed post-treatment sample at a concentration of 9.5 µg/kg, a reduction of 78.9 percent compared to the untreated dry sieve sample (45 µg/kg) and a reduction of 20.8 percent compared to the untreated bulk screening sample (12 µg/kg). TPH C30-C40 was found in the attrition scrubbed post-treatment sample at an estimated concentration of 2.8 µg/kg, a reduction of 93.8 percent compared to the untreated dry sieve sample and a reduction of 76.7 percent compared to the untreated bulk screening sample. TPH C30-C40 was not detected in the untreated wet sieve sample.
  - Silver was detected in the untreated dry sieve sample at a concentration of 0.612 mg/kg; there were no detections of silver in either the trommel scrubbed or attrition scrubbed post-treatment samples. There were no detections of Endosulfan sulfate or Aroclor-1254 in any of the untreated head samples or in the trommel scrubbed or attrition scrubbed post-treatment samples.

- **Water Only, without amendments — less than 200 mesh**
  - DIOXTEQ was found in the combined trommel and attrition scrubbed post-treatment sample at a concentration of 14.65 pg/g, an increase compared to the untreated wet sieve sample (1.96 pg/g); however, it is a reduction of 45.1 percent compared to the untreated bulk screening sample (26.69 pg/g).
  - TPH carbon range C21-C30 was found in the combined trommel and attrition scrubbed post-treatment sample at a concentration of 54 µg/kg, an increase compared to the untreated bulk screening sample (an estimated 2.5 µg/kg). TPH C21-C30 was not detected in the untreated wet sieve sample.
  - TPH carbon range C30-C40 was found in the combined trommel and attrition scrubbed post-treatment sample at a concentration of 90 µg/kg, an increase compared to the untreated bulk screening sample (an estimated 5.6 µg/kg). TPH C30-C40 was not detected in the untreated wet sieve sample.
  - Silver was detected in the combined trommel and attrition scrubbed post-treatment sample at a concentration of 2.24 mg/kg, an increase compared to the untreated wet sieve sample (1.35 mg/kg) and the untreated bulk screening sample (1.22 mg/kg).
  - There were no detections of Endosulfan sulfate or Aroclor-1254 in any of the untreated head samples or in the combined trommel and attrition scrubbed post-treatment sample.

- **Water plus Citrikleen — 200 mesh**
  - DIOXTEQ was found in the trommel scrubbed post-treatment sample at a concentration of 1.58 pg/g, a reduction of 38.8 percent compared to the untreated wet sieve sample, a reduction of 85.8 percent compared to the untreated dry sieve sample, and a reduction of 53.1 percent compared to the untreated bulk screening sample. DIOXTEQ was found in the attrition scrubbed post-treatment sample at a concentration of 0.84 pg/g, a reduction of 67.4 percent compared to the untreated wet sieve sample, a reduction of 92.4 percent compared to the untreated dry sieve sample, and a reduction of 75.1 percent compared to the untreated bulk screening sample.
  - TPH carbon range C21-C30 was found in the trommel scrubbed post-treatment sample at a concentration of 11 µg/kg, a reduction of 56 percent compared to the untreated dry sieve sample and an increase compared to the untreated bulk screening sample. TPH C21-C30 was found in the attrition scrubbed post-treatment sample at an estimated concentration of 3 µg/kg, a reduction of 88 percent compared to the untreated dry sieve sample and a reduction of 52.4 percent compared to the untreated bulk screening sample. TPH C21-C30 was not detected in the untreated wet sieve sample.

TABLE 7-1
**Soil Washing Results for Contaminants of Concern in Soil from 0 to 5 Feet Below Ground Surface**
*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| | | | | | | | | **Untreated Head Sample** | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | **Overall Head Sample** | | **Wet Sieve** | | | | **Dry Sieve** | | **Bulk Screening** | |
| | | | | | | | | +3/8 inch | -3/8 inch | 9 Tyler mesh | 200 mesh | 200 mesh | < 200 mesh | 9 Tyler mesh | 200 mesh | 200 mesh | < 200 mesh |
| | | | | | | | | CDBS1045S101 | CDBS1045S102 | CDBS1045S104 | CDBS1045S105 | CDBS1045D105 | CDBS1045S106 | CDBS1045S108 | CDBS1045S109 | CDBS1045S111 | CDBS1045S112 |
| **Analyte** | **Units** | **LUT value or QAPP RL** | **Residential RSL** | **Industrial RSL** | **Residential RBSL** | **Industrial RBSL** | **Recreational RBSL** | 6/20/2014 | 6/20/2014 | 6/20/2014 | 6/20/2014 | 6/20/2014 | 6/20/2014 | 6/20/2014 | 6/20/2014 | 6/20/2014 | 6/20/2014 |
| Silver | mg/kg | **0.2** | 39 | 510 | 230 | 4,700 | 1,100 | 0.143 U | **0.648 =** | 0.149 U | 0.178 U | 0.179 U | **1.35 =** | 0.156 U | **0.612 =** | 0.17 U | **1.22 =** |
| Endosulfan Sulfate | µg/kg | 0.48 | NC | NC | 410 | 8,200 | 1,900 | 0.34 U | 0.36 U | NA | 0.42 U | 0.43 U | 0.46 U | NA | 0.36 U | 0.4 U | 0.52 U |
| Aroclor-1254 | µg/kg | 17 | 0.11 | 0.74 | 0.23 | 2 | 0.56 | 2.4 U | 2.6 U | 5.6 U | 3 U | 3 U | 3.3 U | 5.3 U | 2.6 U | 2.9 U | 3.7 U |
| TPH C21-C30 | µg/kg | 5,000 | NC | NC | 90,000 | 900,000 | 535,000 | 120 = | 19 = | 7.7 = | 2 U | 2 U | 2.1 U | 15 = | 25 = | 6.3 = | 2.5 J |
| TPH C30-C40 | µg/kg | 10,000 | NC | NC | 180,000 | 1,800,000 | 1,070,000 | 390 = | 39 = | 32 = | 2 U | 5.9 J | 2.1 U | 50 = | 45 = | 12 = | 5.6 J |
| **DIOXTEQ** | pg/g | **0.912** | NC | NC | 4.8 | 33 | 18 | NA | NA | **9.27682 =** | **2.58307 =** | NA | **1.95653 =** | NA | **11.11271 =** | **3.36606 =** | **26.6913 =** |

| | | | | | | | | **Trommel Scrubbed Sample** | | | **Attrition Scrubbed Sample** | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | **w/o amend** | **Citrikleen** | **BioSolve** | **w/o amend** | **Citrikleen** | **Citrikleen** | **BioSolve** |
| | | | | | | | | 200 mesh | 200 mesh | 200 mesh | 200 mesh | 200 mesh | 200 mesh | 200 mesh |
| | | | | | | | | CDBS1045S113 | CDBS1045S115 | CDBS1045S117 | CDBS1045S120 | CDBS1045S122 | CDBS1045D122 | CDBS1045S124 |
| **Analyte** | **Units** | **LUT value or QAPP RL** | **Residential RSL** | **Industrial RSL** | **Residential RBSL** | **Industrial RBSL** | **Recreational RBSL** | 6/20/2014 | 6/20/2014 | 6/20/2014 | 6/20/2014 | 6/20/2014 | 6/20/2014 | 6/20/2014 |
| Silver | mg/kg | **0.2** | 39 | 510 | 230 | 4,700 | 1,100 | 0.17 U | 0.171 U | 0.174 U | 0.184 U | 0.187 U | 0.182 U | 0.192 U |
| Endosulfan Sulfate | µg/kg | 0.48 | NC | NC | 410 | 8,200 | 1,900 | 0.4 U | 0.41 U | 0.41 U | 0.44 U | 0.44 U | 0.43 U | 0.46 U |
| Aroclor-1254 | µg/kg | 17 | 0.11 | 0.74 | 0.23 | 2 | 0.56 | 2.9 U | 2.9 U | 2.9 U | 3.1 U | 3.2 U | 3.1 U | 3.3 U |
| TPH C21-C30 | µg/kg | 5,000 | NC | NC | 90,000 | 900,000 | 535,000 | 3.7 J | 11 = | 27 = | 2 U | 3 J | 2 U | 2.4 J |
| TPH C30-C40 | µg/kg | 10,000 | NC | NC | 180,000 | 1,800,000 | 1,070,000 | 9.5 = | 28 = | 34 = | 2.8 J | 6.7 = | 2 U | 4.1 J |
| **DIOXTEQ** | pg/g | **0.912** | NC | NC | 4.8 | 33 | 18 | **1.56496 =** | **1.58096 =** | **3.09192 =** | **1.505062 =** | 0.84308 = | NA | 0.548855 = |

| | | | | | | | | **Elutriation** | **Trommel and Attrition Scrubbed, Combined** | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | **humic material** | **w/o amend** | **Citrikleen** | **BioSolve** |
| | | | | | | | | -3/8 inch x 200 mesh | < 200 mesh | < 200 mesh | < 200 mesh |
| | | | | | | | | CDBS1045S119 | CDBS1045S114 | CDBS1045S116 | CDBS1045S118 |
| **Analyte** | **Units** | **LUT value or QAPP RL** | **Residential RSL** | **Industrial RSL** | **Residential RBSL** | **Industrial RBSL** | **Recreational RBSL** | 6/20/2014 | 6/20/2014 | 6/20/2014 | 6/20/2014 |
| Silver | mg/kg | **0.2** | 39 | 510 | 230 | 4,700 | 1,100 | NA | **2.24 =** | **2.49 =** | **1.63 =** |
| Endosulfan Sulfate | µg/kg | 0.48 | NC | NC | 410 | 8,200 | 1,900 | NA | 0.99 U | 1.2 U | 1.1 U |
| Aroclor-1254 | µg/kg | 17 | 0.11 | 0.74 | 0.23 | 2 | 0.56 | NA | 7.1 U | 8.4 U | 7.8 U |
| TPH C21-C30 | µg/kg | 5,000 | NC | NC | 90,000 | 900,000 | 535,000 | 860 = | 54 = | 170 = | 380 = |
| TPH C30-C40 | µg/kg | 10,000 | NC | NC | 180,000 | 1,800,000 | 1,070,000 | 1300 = | 90 = | 85 = | 490 = |
| **DIOXTEQ** | pg/g | **0.912** | NC | NC | 4.8 | 33 | 18 | NA | **14.65224 =** | **18.33898 =** | NA |

Notes:
= = actual detected value
DIOXTEQ = dioxins toxic equivalency
J = estimated detected value
LUT = Look-Up-Table
mg/kg = milligram(s) per kilogram
NA = not analyzed
NC = no criteria
pg/g = picogram(s) per gram
QAPP = quality assurance project plan
RBSL = risk-based screening level
RL = reporting limit
RSL = regional screening level
SRAM = standardized risk assessment methodology
TPH = total petroleum hydrocarbons
U = non detected value
µg/kg = micrograms per kilogram
w/o amend = without amendments

TABLE 7-2

**Soil Washing Results for Contaminants of Concern in Soil from 5 to 11 Feet Below Ground Surface**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| | | | | | | | | Untreated Head Sample | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Overall Head Sample | | Wet Sieve | | | Dry Sieve | | Bulk Screening | |
| | | | | | | | | +3/8" | -3/8" | 9 Tyler mesh | 200 mesh | < 200 mesh | 9 Tyler mesh | 200 mesh | 200 mesh | < 200 mesh |
| | | | | | | | | CDBS1045S201 | CDBS1045S202 | CDBS1045S204 | CDBS1045S205 | CDBS1045S206 | CDBS1045S208 | CDBS1045S209 | CDBS1045S211 | CDBS1045S212 |
| **Analyte** | **Units** | **LUT value or QAPP RL** | **Residential RSL** | **Industrial RSL** | **Residential RBSL** | **Industrial RBSL** | **Recreational RBSL** | 6/20/2014 | 6/20/2014 | 6/20/2014 | 6/20/2014 | 6/20/2014 | 6/20/2014 | 6/20/2014 | 6/20/2014 | 6/20/2014 |
| Dieldrin | µg/kg | **0.48** | 0.03 | 0.11 | 0.04 | 0.30 | 0.12 | **0.51 J** | 0.35 U | NA | 0.41 U | 0.47 U | NA | 0.35 U | 0.4 U | 0.53 U |
| TPH C21-C30 | µg/kg | 5,000 | NC | NC | 90,000 | 900,000 | 535,000 | 1.6 U | 1.7 U | NA | 2 U | 2.2 U | NA | 1.7 U | 1.9 U | 2.5 U |
| TPH C30-C40 | µg/kg | 10,000 | NC | NC | 180,000 | 1,800,000 | 1,070,000 | 1.6 U | 1.7 U | NA | 2 U | 2.2 U | NA | 1.7 U | 1.9 U | 2.5 U |

| | | | | | | | | Trommel Scrubbed Sample | | | Attrition Scrubbed Sample | | | Trommel and Attrition Scrubbed, Combined | | | Elutriation |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | w/o amend | Citrikleen | BioSolve | w/o amend | Citrikleen | BioSolve | w/o amend | Citrikleen | BioSolve | humic material |
| | | | | | | | | 200 mesh | 200 mesh | 200 mesh | 200 mesh | 200 mesh | 200 mesh | < 200 mesh | < 200 mesh | < 200 mesh | -3/8" x 200 mesh |
| | | | | | | | | CDBS1045S213 | CDBS1045S215 | CDBS1045S217 | CDBS1045S220 | CDBS1045S222 | CDBS1045S224 | CDBS1045S214 | CDBS1045S216 | CDBS1045S218 | CDBS1045S219 |
| **Analyte** | **Units** | **LUT value or QAPP RL** | **Residential RSL** | **Industrial RSL** | **Residential RBSL** | **Industrial RBSL** | **Recreational RBSL** | 6/20/2014 | 6/20/2014 | 6/20/2014 | 6/20/2014 | 6/20/2014 | 6/20/2014 | 6/20/2014 | 6/20/2014 | 6/20/2014 | 6/20/2014 |
| Dieldrin | µg/kg | **0.48** | 0.03 | 0.11 | 0.04 | 0.30 | 0.12 | 0.4 U | 0.4 U | 0.4 U | 0.41 U | 0.44 U | 0.44 U | 0.56 U | 1.1 U | 1 U | NA |
| TPH C21-C30 | µg/kg | 5,000 | NC | NC | 90,000 | 900,000 | 535,000 | 1.9 U | 1.9 U | 25 = | 1.9 U | 2.1 U | 2.1 U | 2.7 U | 120 = | 93 = | 9.4 = |
| TPH C30-C40 | µg/kg | 10,000 | NC | NC | 180,000 | 1,800,000 | 1,070,000 | 1.9 U | 4.4 J | 27 = | 1.9 U | 2.1 U | 2.1 U | 23 = | 67 = | 100 = | 15 = |

Notes:
= = actual detected value
J = estimated detected value
U = non detected value
µg/kg = micrograms per kilogram
LUT = Look-Up Table
NA = not analyzed
NC = no criteria
QAPP = quality assurance project plan
RBSL = risk-based screening level
RL = reporting limit
RSL = regional screening level
SRAM = standardized risk assessment methodology
TPH = total petroleum hydrocarbons
w/o amend = without amendments

TABLE 7-3

**Percent Reductions from Soil Washing for Contaminants of Concern**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| | | | | Analytes | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Fraction Size | Sample Identification | Silver (mg/kg) | Endosulfan Sulfate (µg/kg) | Aroclor 1254 (µg/kg) | TPH C21-C30 (µg/kg) | TPH C30-C40 (µg/kg) | DIOXTEQ (pg/g) |
| **Percent Reductions compared to Wet Sieve, 200 mesh** | | 200 mesh | CDBS1045S105 | 0.178 U | 0.42 U | 3 U | 2 U | 2 U | **2.58307** |
| Trommel Scrubbed Sample | **Water only** | 200 mesh | CDBS1045S113 | NA | NA | NA | NA | NA | 39.41 |
| Trommel Scrubbed Sample | **Citrikleen** | 200 mesh | CDBS1045S115 | NA | NA | NA | NA | NA | 38.80 |
| Trommel Scrubbed Sample | **BioSolve** | 200 mesh | CDBS1045S117 | NA | NA | NA | NA | NA | -19.70 |
| Attrition Scrubbed Sample | **Water only** | 200 mesh | CDBS1045S120 | NA | NA | NA | NA | NA | 41.73 |
| Attrition Scrubbed Sample | **Citrikleen** | 200 mesh | CDBS1045S122 | NA | NA | NA | NA | NA | 67.36 |
| Attrition Scrubbed Sample | **BioSolve** | 200 mesh | CDBS1045S124 | NA | NA | NA | NA | NA | 78.75 |
| **Percent Reductions compared to Dry Sieve, 200 mesh** | | 200 mesh | CDBS1045S109 | **0.612** | 0.36 U | 2.6 U | 25 | 45 | **11.11271** |
| Trommel Scrubbed Sample | **Water only** | 200 mesh | CDBS1045S113 | NA | NA | NA | 85.2 | 78.89 | 85.92 |
| Trommel Scrubbed Sample | **Citrikleen** | 200 mesh | CDBS1045S115 | NA | NA | NA | 56 | 37.78 | 85.77 |
| Trommel Scrubbed Sample | **BioSolve** | 200 mesh | CDBS1045S117 | NA | NA | NA | -8 | 24.44 | 72.18 |
| Attrition Scrubbed Sample | **Water only** | 200 mesh | CDBS1045S120 | NA | NA | NA | NA | 93.78 | 86.46 |
| Attrition Scrubbed Sample | **Citrikleen** | 200 mesh | CDBS1045S122 | NA | NA | NA | 88 | 85.11 | 92.41 |
| Attrition Scrubbed Sample | **BioSolve** | 200 mesh | CDBS1045S124 | NA | NA | NA | 90.4 | 90.89 | 95.06 |
| **Percent Reductions compared to Bulk Screening, 200 mesh** | | 200 mesh | CDBS1045S111 | 0.17 U | 0.4 U | 2.9 U | 6.3 | 12 | **3.36606** |
| Trommel Scrubbed Sample | **Water only** | 200 mesh | CDBS1045S113 | NA | NA | NA | 41.27 | 20.83 | 53.51 |
| Trommel Scrubbed Sample | **Citrikleen** | 200 mesh | CDBS1045S115 | NA | NA | NA | -74.60 | -133.33 | 53.03 |
| Trommel Scrubbed Sample | **BioSolve** | 200 mesh | CDBS1045S117 | NA | NA | NA | -328.57 | -183.33 | 8.14 |
| Attrition Scrubbed Sample | **Water only** | 200 mesh | CDBS1045S120 | NA | NA | NA | NA | 76.67 | 55.29 |
| Attrition Scrubbed Sample | **Citrikleen** | 200 mesh | CDBS1045S122 | NA | NA | NA | 52.38 | 44.17 | 74.95 |
| Attrition Scrubbed Sample | **BioSolve** | 200 mesh | CDBS1045S124 | NA | NA | NA | 61.90 | 65.83 | 83.69 |
| **Percent Reductions compared to Wet Sieve, < 200 mesh** | | < 200 mesh | CDBS1045S106 | **1.35** | 0.46 U | 3.3 U | 2.1 U | 2.1 U | **1.95653** |
| Trommel and Attrition Scrubbed, Combined | **Water only** | < 200 mesh | CDBS1045S114 | **-65.93** | NA | NA | NA | NA | -648.89 |
| Trommel and Attrition Scrubbed, Combined | **Citrikleen** | < 200 mesh | CDBS1045S116 | **-84.44** | NA | NA | NA | NA | -837.32 |
| Trommel and Attrition Scrubbed, Combined | **BioSolve** | < 200 mesh | CDBS1045S118 | **-20.74** | NA | NA | NA | NA | NA |

TABLE 7-3

**Percent Reductions from Soil Washing for Contaminants of Concern**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| | | | | Analytes | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | **Fraction Size** | **Sample Identification** | **Silver (mg/kg)** | **Endosulfan Sulfate (µg/kg)** | **Aroclor 1254 (µg/kg)** | **TPH C21-C30 (µg/kg)** | **TPH C30-C40 (µg/kg)** | **DIOXTEQ (pg/g)** |
| **Percent Reductions compared to Bulk Screening, < 200 mesh** | | < 200 mesh | CDBS1045S112 | **1.22** | 0.52 U | 3.7 U | 2.5 | 5.6 | **26.6913** |
| Trommel and Attrition Scrubbed, Combined | **Water only** | < 200 mesh | CDBS1045S114 | **-83.61** | NA | NA | -2060 | -1507.14 | **45.10** |
| Trommel and Attrition Scrubbed, Combined | **Citrikleen** | < 200 mesh | CDBS1045S116 | **-104.10** | NA | NA | -6700 | -1417.86 | **31.29** |
| Trommel and Attrition Scrubbed, Combined | **BioSolve** | < 200 mesh | CDBS1045S118 | **-33.61** | NA | NA | -15100 | -8650 | NA |
| **Percent Reductions compared to -3/8"** | | -3/8 inch | CDBS1045S102 | **0.648** | 0.36 U | 2.6 U | 19 | 39 | NA |
| Elutriation | **humic material** | -3/8 inch x 200 mesh | CDBS1045S119 | NA | NA | NA | -4426.32 | -3233.33 | NA |

Notes:
µg/kg = micrograms per kilogram
DIOXTEQ = dioxins toxic equivalency
mg/kg = milligram(s) per kilogram
NA = not analyzed
TPH = total petroleum hydrocarbons
U = non detected value

  - TPH C30-C40 was found in the trommel scrubbed post-treatment sample at a concentration of 28 µg/kg, a reduction of 37.8 percent compared to the untreated dry sieve sample and an increase compared to the untreated bulk screening sample. TPH C30-C40 was found in the attrition scrubbed post-treatment sample at a concentration of 6.7 µg/kg, a reduction of 85.1 percent compared to the untreated dry sieve sample and a reduction of 44.2 percent compared to the untreated bulk screening sample. TPH C30-C40 was not detected in the untreated wet sieve sample.
  - Silver was detected in the untreated dry sieve sample at a concentration of 0.612 mg/kg; there were no detections of silver in either the trommel scrubbed or attrition scrubbed post-treatment samples. There were no detections of Endosulfan sulfate or Aroclor-1254 in any of the untreated head samples or in the trommel scrubbed or attrition scrubbed post-treatment samples.

- **Water plus Citrikleen — less than 200 mesh**
  - DIOXTEQ was found in the combined trommel and attrition scrubbed post-treatment sample at a concentration of 18.34 pg/g, an increase compared to the untreated wet sieve sample; however, it is a reduction of 31.3 percent compared to the untreated bulk screening sample.
  - TPH carbon range C21-C30 was found in the combined trommel and attrition scrubbed post-treatment sample at a concentration of 170 µg/kg, an increase compared to the untreated bulk screening sample. TPH C21-C30 was not detected in the untreated wet sieve sample.
  - TPH carbon range C30-C40 was found in the combined trommel and attrition scrubbed post-treatment sample at a concentration of 85 µg/kg, an increase compared to the untreated bulk screening sample. TPH C30-C40 was not detected in the untreated wet sieve sample.
  - Silver was detected in the combined trommel and attrition scrubbed post-treatment sample at a concentration of 2.49 mg/kg, an increase compared to the untreated wet sieve sample and the untreated bulk screening sample.
  - There were no detections of Endosulfan sulfate or Aroclor-1254 in any of the untreated head samples or in the combined trommel and attrition scrubbed post-treatment sample.

- **Water plus BioSolve — 200 mesh**
  - DIOXTEQ was found in the trommel scrubbed post-treatment sample at a concentration of 3.09 pg/g, an increase compared to the untreated wet sieve sample, a reduction of 72.2 percent compared to the untreated dry sieve sample, and a reduction of 8.3 percent compared to the untreated bulk screening sample. DIOXTEQ was found in the attrition scrubbed post-treatment sample at a concentration of 0.55 pg/g, a reduction of 78.7 percent compared to the untreated wet sieve sample, a reduction of 95 percent compared to the untreated dry sieve sample, and a reduction of 83.7 percent compared to the untreated bulk screening sample.
  - TPH carbon range C21-C30 was found in the trommel scrubbed post-treatment sample at a concentration of 27 µg/kg, an increase compared to the untreated dry sieve sample and the untreated bulk screening sample. TPH C21-C30 was found in the attrition scrubbed post-treatment sample at an estimated concentration of 2.4 µg/kg, a reduction of 90.4 percent compared to the untreated dry sieve sample and a reduction of 61.9 percent compared to the untreated bulk screening sample. TPH C21-C30 was not detected in the untreated wet sieve sample.
  - TPH C30-C40 was found in the trommel scrubbed post-treatment sample at a concentration of 34 µg/kg, a reduction of 24.4 percent compared to the untreated dry sieve sample and an increase compared to the untreated bulk screening sample. TPH C30-C40 was found in the attrition scrubbed post-treatment sample at an estimated concentration of 4.1 µg/kg, a reduction of 90.9 percent compared to the untreated dry sieve sample and a reduction of 65.8 percent compared to the untreated bulk screening sample. TPH C30-C40 was not detected in the untreated wet sieve sample.
  - Silver was detected in the untreated dry sieve sample at a concentration of 0.612 mg/kg; there were no detections of silver in either the trommel scrubbed or attrition scrubbed post-treatment samples. There

were no detections of Endosulfan sulfate or Aroclor-1254 in any of the untreated head samples or in the trommel scrubbed or attrition scrubbed post-treatment samples.

- **Water plus BioSolve — less than 200 mesh**
  - DIOXTEQ was not analyzed in the combined trommel and attrition scrubbed post-treatment sample due to lack of sample volume.
  - TPH carbon range C21-C30 was found in the combined trommel and attrition scrubbed post-treatment sample at a concentration of 380 µg/kg, an increase compared to the untreated bulk screening sample. TPH C21-C30 was not detected in the untreated wet sieve sample.
  - TPH carbon range C30-C40 was found in the combined trommel and attrition scrubbed post-treatment sample at a concentration of 490 µg/kg, an increase compared to the untreated bulk screening sample. TPH C30-C40 was not detected in the untreated wet sieve sample.
  - Silver was detected in the combined trommel and attrition scrubbed post-treatment sample at a concentration of 1.63 mg/kg, an increase compared to the untreated wet sieve sample and the untreated bulk screening sample.
  - There were no detections of Endosulfan sulfate or Aroclor-1254 in any of the untreated head samples or in the combined trommel and attrition scrubbed post-treatment sample.
- **Elutriation — -3/8 inch by 200 mesh**
  - TPH carbon range C21-C30 was found in the elutriation post-treatment sample at a concentration of 860 µg/kg, an increase compared to the overall untreated -3/8-inch head sample.
  - TPH carbon range C30-C40 was found in the elutriation post-treatment sample at a concentration of 1,300 µg/kg, an increase compared to the overall untreated -3/8-inch head sample.

Post-treatment samples for soil collected from 5 to 11 feet bgs included elutriated samples at -3/8 inch by 200 mesh, trommel scrubbed samples at 200 mesh, attrition scrubbed samples at 200 mesh, and trommel and attrition scrubbed sampled combined (due to lack of sample volume) at less than 200 mesh. The post-treatment contaminant concentrations were compared to the baseline concentrations from wet sieve head samples at 200 mesh and less than 200 mesh, dry sieve head samples at 200 mesh, and bulk screening samples at 200 mesh and less than 200 mesh. Two initial untreated head samples at +3/8 inch and -3/8 inch were collected prior to any further sorting, and dry sieve and wet sieve samples were also collected at 9 Tyler mesh; there were no analyses run for COCs at 9 Tyler mesh due to limited sample volume. The -3/8-inch untreated head sample can be compared to only the -3/8 inch by 200 mesh elutriation sample. Based on Table 7-2, the following observations were made regarding the percentage reduction of COC concentrations in the post-treatment samples.

- **Water Only, without amendments — 200 mesh**
  - There were no detections of dieldrin, TPH C21-C30, or TPH C30-C40 in any of the untreated head samples or in either the trommel scrubbed or attrition scrubbed post-treatment samples.
- **Water Only, without amendments — less than 200 mesh**
  - TPH carbon range C30-C40 was found in the combined trommel and attrition scrubbed post-treatment sample at a concentration of 23 µg/kg; TPH C30-C40 was not detected in the untreated wet sieve sample or the untreated bulk screening sample. There were no detections of dieldrin or TPH C21-C30 in any of the untreated head samples or in the combined trommel and attrition scrubbed post-treatment sample.
- **Water plus Citrikleen — 200 mesh**
  - TPH carbon range C30-C40 was found in the trommel scrubbed post-treatment sample at an estimated concentration of 4.4 µg/kg; TPH C30-C40 was not detected in any of the untreated head samples or in the attrition scrubbed post-treatment sample. There were no detections of dieldrin or TPH C21-C30 in any of the untreated head samples, the trommel scrubbed post-treatment sample, or in the attrition scrubbed post-treatment sample.

- **Water plus Citrikleen — less than 200 mesh**
  - TPH carbon range C21-C30 was found in the combined trommel and attrition scrubbed post-treatment sample at a concentration of 120 µg/kg and TPH C30-C40 was found in the combined trommel and attrition scrubbed post-treatment sample at a concentration of 67 µg/kg; neither TPH C21-C30 nor TPH C30-C40 was detected in the untreated wet sieve sample or the untreated bulk screening sample. There were no detections of dieldrin in any of the untreated head samples or in the combined trommel and attrition scrubbed post-treatment sample.
- **Water plus BioSolve — 200 mesh**
  - TPH carbon range C21-C30 was found in the trommel scrubbed post-treatment sample at a concentration of 25 µg/kg and TPH C30-C40 was found in the trommel scrubbed post-treatment sample at a concentration of 27 µg/kg; neither TPH carbon range was detected in any of the untreated head samples or in the attrition scrubbed post-treatment sample. There were no detections of dieldrin in any of the untreated head samples, the trommel scrubbed post-treatment sample, or in the attrition scrubbed post-treatment sample.
- **Water plus BioSolve — less than 200 mesh**
  - TPH carbon range C21-C30 was found in the combined trommel and attrition scrubbed post-treatment sample at a concentration of 93 µg/kg and TPH C30-C40 was found in the combined trommel and attrition scrubbed post-treatment sample at a concentration of 100 µg/kg; neither TPH C21-C30 nor TPH C30-C40 was detected in the untreated wet sieve sample or the untreated bulk screening sample. There were no detections of dieldrin in any of the untreated head samples or in the combined trommel and attrition scrubbed post-treatment sample.
- **Elutriation — -3/8 inch by 200 mesh**
  - TPH carbon range C21-C30 was found in the elutriation post-treatment sample at a concentration of 9.4 µg/kg and TPH C30-C40 was found in the elutriation post-treatment sample at a concentration of 15 µg/kg; neither TPH C21-C30 nor TPH C30-C40 was detected in the overall untreated -3/8-inch head sample. There were no detections of dieldrin in the untreated head sample and it was not analyzed in the elutriation sample.

### 7.1.2 Post-Treatment COC Concentrations — Comparison to Screening Criteria

As shown in Table 7-1, the following observations were made regarding COC concentrations in the post-treatment samples for soil collected from 0 to 5 feet bgs:

- **Water Only, without amendments**
  - DIOXTEQ remained above the LUT value for trommel scrubbed and the attrition scrubbed post-treatment samples at 200 mesh. DIOXTEQ remained above the LUT value and the residential RBSL for the combined trommel and attrition scrubbed sample at less than 200 mesh. Silver remained above the LUT value for the combined trommel and attrition scrubbed sample at less than 200mesh. All other COCs were below LUT values or QAPP RLs, RSLs, and RBSLs.
- **Water plus Citrikleen**
  - DIOXTEQ remained above the LUT value for the trommel scrubbed post-treatment sample at 200 mesh. DIOXTEQ remained above the LUT value and the residential and recreational RBSLs for the combined trommel and attrition scrubbed sample at less than 200 mesh. Silver remained above the LUT value for the combined trommel and attrition scrubbed sample at less than 200 mesh. All other COCs were below LUT values or QAPP RLs, RSLs, and RBSLs.
- **Water plus BioSolve**
  - DIOXTEQ remained above the LUT value for the trommel scrubbed post-treatment sample at 200 mesh. DIOXTEQ was not analyzed in the combined trommel and attrition scrubbed sample at less than 200

mesh. Silver remained above the LUT value for the combined trommel and attrition scrubbed sample at less than 200 mesh. All other COCs were below LUT values or QAPP RLs, RSLs, and RBSLs.

As shown in Table 7-2, there were no COCs present at concentrations exceeding the LUT values or QAPP RLs, RSLs, or RBSLs in the post-treatment samples for soil collected from 5 to 11 feet bgs.

### 7.1.3 Comparison to Objectives

Section 6.1.1 describes the overall performance goals and objectives of the soil washing bench scale TS. As shown in Table 7-4, observations indicate that the objectives were met. Conclusions regarding the appropriate path forward for using soil washing as a viable remediation technology at SSFL are in Section 12.2

TABLE 7-4
**Soil Washing Bench Scale TS Objectives and Observations**
*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Performance Objectives | Bench Scale Observations |
|---|---|
| Evaluate whether soil washing can reduce COC concentrations to LUT values or QAPP RLs. | As illustrated by bench testing results, this technology can effectively reduce COC concentrations to the LUT values or QAPP RLs for the wash solutions used in the soil washing bench scale TS. |
| Document reductions in COC concentrations in the various soil fractions and compare concentration results to the LUT values or QAPP RLs. | As presented in Section 7.1.1, reductions in COC concentrations and comparisons to the LUT values or QAPP RLs have been documented for the soil washing bench scale TS. |
| If LUT values or QAPP RLs cannot be achieved, evaluate whether soil washing can reduce COC concentrations to EPA Region 9 RSLs for residential or industrial scenarios or SRAM RBSLs for residential, recreational, or industrial risk scenarios. | As presented in Section 7.1.1, concentration comparisons to the EPA Region 9 RSLs and SRAM RBSLs have been evaluated for the soil washing bench scale TS. |
| Assess the efficacy of soil washing. | Efficacy involves the overall success and feasibility of a technology as a remediation strategy. For the soil washing bench scale TS, concentration reductions to the LUT values or QAPP RLs were generally realized. |
| Summarize the results of the soil washing bench scale TS. | As provided in Section 7.1, pertinent results for the soil washing bench scale TS have been summarized. |
| Define the process conditions requisite to achieve LUT values or QAPP RLs, Region 9 RSLs, and SRAM RBSLs to assess the cost, feasibility, and implementability of soil washing as a full-scale remedial alternative. | On the basis of the results of the soil washing bench scale TS, this technology is an effective method for reducing COC concentrations and meeting applicable criteria; however, the excessive water demands required for a full-scale version of the process make this technology impractical in the arid site setting where water resources are heavily strained by prevailing local drought conditions. Therefore, soil washing is not the most practical/feasible choice for ongoing remediation efforts for contaminated soil at SSFL. |

Notes:
COC = contaminant of concern
EPA = U.S. Environmental Protection Agency
LUT = Look-Up Table
QAPP = quality assurance project plan
RBSL = risk-based screening level
RL = reporting limit
RSL = regional screening level
SCRAM = standardized risk assessment methodology
SSFL = Santa Susana Field Laboratory
TS = treatability study

# 7.2 Thermal Desorption – Alfa/Bravo Fuel Farm

## 7.2.1 Data Analysis and Interpretation

The reduction of COC concentrations achieved by thermal desorption was evaluated in two ways. First, percentage reductions in COC concentrations were calculated for post-treatment samples compared to pre-treatment (baseline samples) and samples from soil boring ABBS1018. Second, the reduced COC concentrations were compared to LUT values or QAPP RLs, EPA Region 9 RSLs, and SRAM RBSLs. These evaluations were performed to determine if it can meet AOC cleanup requirements and assess the effectiveness of this technology for treatment of contaminated soil at SSFL and to determine if this technology can provide an acceptable alternative to offsite disposal. Tables 7-5 and 7-6 provide the thermal desorption bench scale analytical data for soil collected in the study area from 0 to 5 feet bgs and 5 to 10 feet bgs, respectively. Appendix C contains the laboratory analytical data reports for the thermal desorption bench scale TS.

### 7.2.1.1 Post-Treatment COC Concentrations – Comparison to Pre-Treatment Concentrations

The TPH fractions C21-C30 and C30-C40 were the only detected contaminants in the untreated, baseline sample collected for the study. Based on Tables 7-5, 7-6, and 7-7, the following observations were made regarding the percentage reduction of TPH concentrations in the four post-treatment samples for soil collected in the study area from 0 to 5 feet bgs, as compared to the baseline concentrations from the untreated sample:

- 250°C at 15 minutes: TPH carbon ranges C4-C12, C21-C30, and C30-C40 were detected in the post-treatment sample. Carbon range C4-C12 was not detected in the baseline sample and therefore cannot be compared for percent reduction. The post-treatment value for TPH carbon range C21-C30 of 8.2 mg/kg corresponds to a reduction of 77.2 percent compared to the baseline concentration of 36 mg/kg. The post-treatment value for TPH carbon range C30-C40 of 19 mg/kg corresponds to a reduction of 60.4 percent compared to the baseline concentration of 48 mg/kg.
- 250°C at 30 minutes: TPH carbon ranges C4-C12, C8-C11, C15-C20, C21-C30, and C30-C40 were detected in the post-treatment sample. TPH carbon ranges C4-C12, C8-C11, and C15-C20 were not detected in the baseline sample and therefore cannot be compared for percent reduction. The post-treatment values for TPH carbon range C21-C30 of 10 mg/kg (native) and 8.1 mg/kg (duplicate) correspond to a reduction of 72.2 percent and 77.5 percent, respectively, compared to the baseline concentration of 36 mg/kg. The post-treatment values for TPH carbon range C30-C40 of 11 mg/kg (native) and 8.8 mg/kg (duplicate) correspond to a reduction of 77.1 percent and 81.7 percent, respectively, compared to the baseline concentration of 48 mg/kg.
- 550°C at 15 minutes: No TPH fractions were detected in this sample; therefore, the concentration reductions for all analyzed TPH fractions are considered complete.
- 550°C at 30 minutes: No TPH fractions were detected in this sample; therefore, the concentration reductions for all analyzed TPH fractions are considered complete.

Based on Table 7-5, the percentage reduction of TPH concentrations in the four post-treatment samples for soil collected in the study area from 5 to 10 feet bgs cannot be calculated. In the untreated sample, TPH carbon ranges C21-C30 and C30-C40 were detected but at concentrations below all screening levels. In the post-treatment samples, only the TPH carbon range C4-C12 was detected, again at concentrations below all screening levels.

### 7.2.1.2 Post-Treatment COC Concentrations – Comparison to Screening Criteria

As shown in Table 7-5, the following observations were made regarding COC concentrations in the four post-treatment samples for soil collected in the study area from 0 to 5 feet bgs:

- 250°C at 15 minutes: This test provided effective removal; however, treated soil exhibited a concentration of 1.2 mg/kg for TPH carbon range C4-C12, which is slightly greater than the screening level of 1 mg/kg and which was not seen at a detected concentration in the untreated sample; there is no EPA Region 9 RSL for C4-12 and the concentration was below all SRAM RBSLs. In addition, treated soil still retained a concentration of 8.2 mg/kg for TPH carbon range C21-C30, which was slightly greater than the screening level of 5 mg/kg.

There is no EPA Region 9 RSL for C21-C30 and it was below the lowest SRAM RBSL of 90,000 mg/kg for a residential risk scenario. Treated soil also retained a concentration of 19 mg/kg for TPH carbon range C30-C40, which was greater than the screening level of 10 mg/kg. There is no EPA Region 9 RSL for C30-C40 and it is below the lowest SRAM RBSL of 180,000 mg/kg for a residential risk scenario.

- 250°C at 30 minutes: This test provided effective removal; however, treated soil again exhibited a detected concentration of C4-C12 above the screening level of 1 mg/kg, at concentrations of 1.4 mg/kg in the native sample and 1.7 mg/kg in the duplicate sample. Additionally, the treated soil retained a concentration of 10 mg/kg (native) and 8.1 mg/kg (duplicate) for TPH carbon range C21-C30, which was slightly greater than the screening of 5 mg/kg. Treated soil also retained a concentration of 11 mg/kg (native) for TPH carbon range C30-C40, which was slightly greater than the screening level of 10 mg/kg.
- 550°C at 15 minutes and 550°C at 30 minutes: These tests provided effective removal with no detected contaminant concentrations in post-treatment samples.

As shown in Table 7-6, all tests provided effective removal, and COC concentrations in the four post-treatment samples for soil collected from 5 to 10 feet bgs met all LUT values or QAPP RLs, RSLs, and RBSLs.

TABLE 7-5

**Thermal Desorption Results for Soil from 0 to 5 Feet Below Ground Surface**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| | | | | | | | ABBS 1018S101 | ABBS 1018S102 | ABBS 1018S103 | ABBS 1018D103 | ABBS 1018S104 | ABBS 1018S105 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Depth | 0 – 5 feet bgs | 0 – 5 feet bgs | 0 – 5 feet bgs | 0 – 5 feet bgs | 0 – 5 feet bgs | 0 – 5 feet bgs |
| | | | | | | Temperature | Untreated | 250°C | 250°C | 250°C | 550°C | 550°C |
| | | | | | | Retention Time | None | 15 minutes | 30 minutes | 30 minutes | 15 minutes | 30 minutes |
| Analyte | LUT Value or QAPP RL | Residential RSL | Industrial RSL | Residential RBSL | Industrial RBSL | Recreational RBSL | all results in mg/kg | | | | | |
| TPH C4-C12 | 1 | NA | NA | 55 | 317 | 581 | 0.14 U | **1.2 =** | **1.4 =** | **1.7 =** | 0.12 U | 0.13 U |
| TPH C8-C11 | 5 | NA | NA | 55 | 317 | 581 | 1.7 U | 1.6 U | 3.3 J | 3.5 J | 1.6 U | 1.6 U |
| TPH C12-C14 | 5 | NA | NA | 55 | 317 | 581 | 1.7 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U |
| TPH C15-C20 | 5 | NA | NA | 55 | 317 | 581 | 1.7 U | 1.6 U | 3.3 J | 2.7 J | 1.6 U | 1.6 U |
| TPH C21-C30 | 5 | NA | NA | 90,000 | 900,000 | 535,000 | **36 =** | **8.2 =** | **10 =** | **8.1 =** | 1.6 U | 1.6 U |
| TPH C30-C40 | 10 | NA | NA | 180,000 | 1,800,000 | 1,070,000 | **48 =** | **19 =** | **11 =** | 8.8 = | 1.6 U | 1.6 U |
| Antimony | 0.86 | 3.1 | 41 | 26 | 530 | 120 | 0.16 U | 0.143 U | 0.146 U | 0.146 U | 0.146 U | 0.148 U |
| Total Solids % | NA | NA | NA | NA | NA | NA | 93 = | 100 = | 99.2 = | 99.7 = | 99.7 = | 99.7 = |

Notes:

**Bold** values exceed LUT values or QAPP RLs

bgs = below ground surface

°C = degrees Celsius

= = actual detected value

J = estimated detected value

LUT = Look-Up Table

mg/kg = milligram(s) per kilogram

QAPP = Quality Assurance Project Plan

RBSL = risk-based screening level

RL = reporting limit

RSL = regional screening level

SRAM = standardized risk assessment methodology

TPH = total petroleum hydrocarbons

U = non-detected value

TABLE 7-6

**Thermal Desorption Results for Soil from 5 to 10 Feet Below Ground Surface**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| | | | | | | | ABBS 1018S201 | ABBS 1018S202 | ABBS 1018S203 | ABBS 1018S204 | ABBS 1018S205 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Depth | 5 – 10 feet bgs | 5 – 10 feet bgs | 5 – 10 feet bgs | 5 – 10 feet bgs | 5 – 10 feet bgs |
| | | | | | | Temperature | Untreated | 250°C | 250°C | 550°C | 550°C |
| | | | | | | Retention Time | None | 15 minutes | 30 minutes | 15 minutes | 30 minutes |
| Analyte | LUT Value or QAPP RL | Residential RSL | Industrial RSL | Residential RBSL | Industrial RBSL | Recreational RBSL | all results in mg/kg | | | | |
| TPH C4-C12 | 1 | NA | NA | 55 | 317 | 581 | 0.13 U | 0.84 = | 0.73 = | 0.13 U | 0.12 U |
| TPH C8-C11 | 1 | NA | NA | 55 | 317 | 581 | 1.7 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U |
| TPH C12-C14 | 5 | NA | NA | 55 | 317 | 581 | 1.7 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U |
| TPH C15-C20 | 5 | NA | NA | 55 | 317 | 581 | 1.7 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U |
| TPH C21-C30 | 5 | NA | NA | 90,000 | 900,000 | 535,000 | 3.9 = | 1.6 U | 1.6 U | 1.6 U | 1.6 U |
| TPH C30-C40 | 10 | NA | NA | 180,000 | 1,800,000 | 1,070,000 | 3.3 = | 1.6 U | 1.6 U | 1.6 U | 1.6 U |
| Antimony | 0.86 | 3.1 | 41 | 26 | 530 | 120 | 0.164 U | 0.149 U | 0.149 U | 0.143 U | 0.149 U |
| Total Solids % | NA | NA | NA | NA | NA | NA | 93.9 = | 100 = | 100 = | 99.7 = | 99.6 = |

Notes:

= = actual detected value
°C = degrees Celsius
bgs = below ground surface
LUT = Look-Up Table
mg/kg = milligram(s) per kilogram
QAPP = Quality Assurance Project Plan
RBSL = risk based screening level
RL = reporting limit
RSL = regional screening level
SRAM = standardized risk assessment methodology
TPH = total petroleum hydrocarbons
U = non-detected value

TABLE 7-7
**Percent Reduction of Contaminants in Thermal Desorption Data**
*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| | ABBS1018S101 | ABBS1018S102 | ABBS1018S103 | ABBS1018D103 | ABBS1018S104 | ABBS1018S105 |
|---|---|---|---|---|---|---|
| **Temperature** | **Untreated** | **250°C** | **250°C** | **250°C** | **550°C** | **550°C** |
| **Retention Time** | **None** | **15 minutes** | **30 minutes** | **30 minutes** | **15 minutes** | **30 minutes** |
| **Analyte** | **Baseline Concentration (mg/kg)** | **Percent Reduction, 0 - 5 feet bgs** | | | | |
| TPH C21-C30 | 36 = | 77.2 | 72.2 | 77.5 | 95.5 | 95.5 |
| TPH C30-C40 | 48 = | 60.4 | 77.1 | 81.7 | 96.7 | 96.7 |

Notes
= = actual detected value
°C = degrees Celsius
bgs = below ground surface
TPH = total petroleum hydrocarbons

## 7.2.2 Comparison to Objectives

Section 6.2.1 describes the overall performance goals and objectives of the thermal desorption bench scale TS. As shown in Table 7-8, observations indicate that the objectives were met. Conclusions regarding the appropriate path forward for using thermal desorption as a viable remediation technology at SSFL are in Section 12.3.

TABLE 7-8
**Thermal Desorption Bench Scale TS Objectives and Observations**
*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Performance Objectives | Bench Scale Observations |
|---|---|
| Evaluate whether thermal desorption can reduce COC concentrations to LUT values or QAPP RLs. | As illustrated by bench testing results, this technology can effectively reduce COC concentrations to the LUT values or QAPP RLs for the temperatures and retention times used in the thermal desorption bench scale TS, with improved performance for higher temperatures. |
| Document reductions in COC concentrations in the various soil fractions and compare concentration results to the LUT values or QAPP RLs. | As presented in Section 6.2.1, reductions in COC concentrations and comparisons to the LUT values or QAPP RLs have been documented for the thermal desorption bench scale TS. |
| If LUT values or QAPP RLs cannot be achieved, evaluate whether thermal desorption can reduce COC concentrations to EPA Region 9 RSLs for residential or industrial scenarios or SRAM RBSLs for residential, recreational, or industrial risk scenarios. | As presented in Section 6.21, concentration comparisons to the EPA Region 9 RSLs and SRAM RBSLs have been evaluated for the thermal desorption bench scale TS. |
| Assess the efficacy of thermal desorption. | Efficacy involves the overall success and feasibility of a technology as a remediation strategy. For the thermal desorption bench scale TS, concentration reductions to the LUT values or QAPP RLs were generally realized; in addition, the potential implementation of a full-scale version of the process makes this technology practical, and further pilot testing may be warranted. |
| Summarize the results of the thermal desorption bench scale TS. | As provided in Section 6.2, pertinent results for the thermal desorption bench scale TS have been summarized. |

TABLE 7-8
**Thermal Desorption Bench Scale TS Objectives and Observations**
*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Performance Objectives | Bench Scale Observations |
|---|---|
| Define the process conditions requisite to achieve LUT values or QAPP RLs, Region 9 RSLs, and SRAM RBSLs to assess the cost, feasibility, and implementability of thermal desorption as a full-scale remedial alternative. | On the basis of the results of the thermal desorption bench scale TS, this technology is an effective method for reducing COC concentrations and meeting applicable criteria; moreover, this technology may offer a practical/feasible choice for ongoing remediation efforts for contaminated soil at SSFL. |

Notes:
COC = contaminant of concern
EPA = U.S. Environmental Protection Agency
LUT = Look-Up Table
QAPP = quality assurance project plan
RBSL = risk-based screening level
RL = reporting limit
RSL = regional screening level
SCRAM = standardized risk assessment methodology
SSFL = Santa Susana Field Laboratory
TS = Treatability Study

SECTION 8

# Background of Field Scale Sites

## 8.1 Bravo Skim Pond Site Description

The Bravo Area (Figure 8-1) contains two former skim ponds: the Alfa/Bravo Skim Pond and the Bravo Skim Pond. The bioventing and ISCO pilot tests documented in this report were conducted in the northwest portion of the Bravo Skim Pond area (Figure 8-2). Alluvial soil in the Bravo Skim Pond area consists primarily of moist, silty sand. Soil thickness varies in this area, and a maximum depth to bedrock of 8 feet bgs was encountered. The potentiometric surface of groundwater in the Bravo Skim Pond area is below the top of the bedrock.

## 8.2 History of Operations

Background information, operational histories, past investigations, and CSMs for the study areas are provided in the project work plan (NASA, 2014b). More thorough historical evaluations and detailed results of sampling efforts are presented in the Field Sampling Plan 3 (FSP-3) report (NASA, 2013c) and Field Sampling Plan 6 (FSP-6) report (NASA, 2013b).

The Bravo Area was constructed beginning in 1956 to provide support for tests conducted at three engine test stands. Details of the Bravo Area operational history can be found in FSP-3.

Five solid waste management units (SWMUs) have been designated in the Bravo Area. The former Alfa/Bravo Skim Pond and the Bravo Skim Pond (where bioventing and ISCO operations were conducted) have been designated as SWMU 5.12 and SWMU 5.15, respectively. The Bravo Skim Pond is an unlined surface impoundment with an estimated 150,000-gallon capacity and was the primary retention pond for spent cooling water and residual trichloroethene from the Bravo Area testing and cleaning activities. The Bravo Skim Pond SWMU includes the drainage leading to the pond from the test stands and drainage leading to the Alfa/Bravo Skim Pond. The Bravo Skim Pond is inactive and dry; however, surface water collects in the pond on occasion during rainy periods.

Engine testing was conducted at the Bravo Area between 1956 and 2005, and the Bravo Area is now inactive. Most of the Bravo Area facility is still intact, the exceptions being Bravo Test Stand 3 that was demolished in 1969, the groundwater air-stripping towers that were demolished in 2011, buildings destroyed in the 2005 wildfires (the Pretest Shop and Bravo Area Entry Guard Shack), and various removed ASTs in the Bravo Area (Figure 8-1). Implementation of this work was conducted in accordance with the work plan (NASA, 2014b), and work plan addendum (NASA, 2014d).

## 8.3 Treatment Technology Descriptions

### 8.3.1 Bioventing

Treatment of soil via bioventing involves the introduction of air (oxygen) to contaminated soil to promote biological activity, which leads to bioremediation of COCs. Bioventing consists of the installation of air injection (or extraction) wells within contaminated soil. Pressure or vacuum is applied to the wells, which facilitates the distribution of atmospheric oxygen through a targeted volume of soil. Assuming the soil is oxygen-limited at the outset, the increased concentrations of oxygen in the soil gas stimulate indigenous aerobic microorganisms, which naturally degrade some organic COCs. Bioventing treatment systems can be monitored through soil gas and soil sampling to evaluate the efficacy of the remedial action.

Bioventing most commonly is used to treat contamination from hydrocarbon fuel releases (gasoline, diesel, and kerosene), but also can effectively treat a wider range of organic pollutants. This technology has been shown to be most effective when treating low molecular weight hydrocarbons.

### 8.3.2 In Situ Chemical Oxidation

Bioventing alone was not anticipated to reduce concentrations of the COCs detected in the Bravo Area to LUT values or QAPP RLs at the majority of sampling locations. Consequently, ISCO was implemented as a follow-up

remedial action. ISCO is the application of an oxidizing agent to the subsurface to chemically oxidize organic compounds in the soil, transforming organic constituents through a series of oxidation reactions to inorganic constituents such as carbon dioxide and water. Chemical oxidation has been demonstrated to be effective in remediating soil affected by VOCs (including chlorinated solvents), SVOCs, PAHs, TPH, and in some cases pesticides (EPA, 2006). Commonly used oxidants include catalyzed hydrogen peroxide, persulfate, permanganate, and ozone.

The bioventing treatment effectiveness and ISCO treatment effectiveness were evaluated separately; the combined effectiveness of bioventing and ISCO also was evaluated.

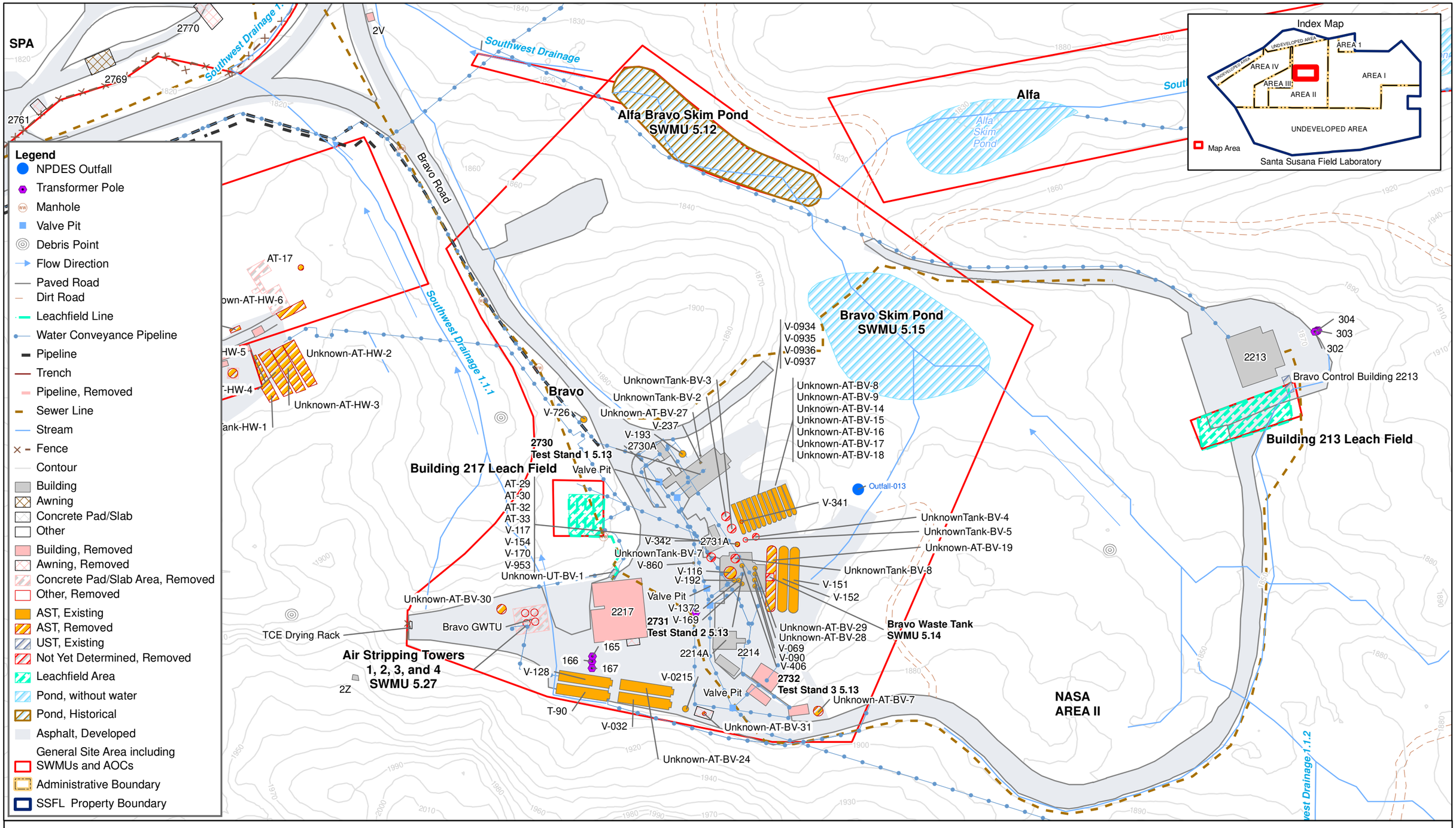


**Figure 8-1**
**Site Map for the Bravo Area**
***Soil Treatability Study Summary***
***NASA SSFL, Ventura County, California***

Map Document: O:\NASA\SSFL\maps\Groundwater\RFI\BRAVO_RFI_SiteMap.mxd

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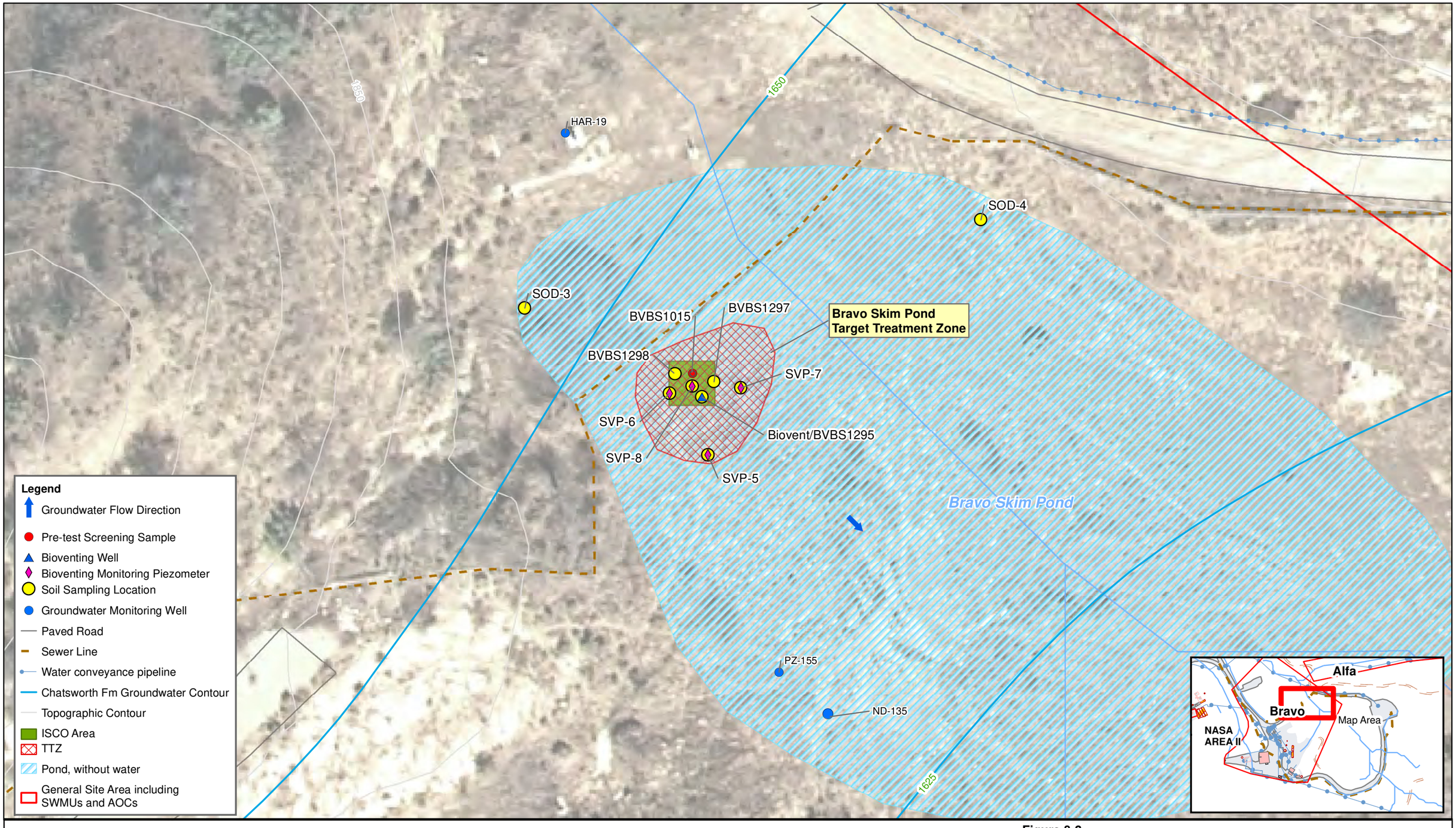


**Figure 8-2**
**Bravo Skim Pond Area**
**ISCO/Bioventing Activities and Groundwater Sampling Locations**
**Soil Treatability Studies Summary**
**NASA SSFL, Ventura County, California**

Map Document: O:\NASA\SSFL\maps\TreatabilityStudy\Bravo_ISCOTM_SampleLocs.mxd

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SECTION 9

# Field Scale Project Approach

## 9.1 Bioventing Implementation

Implementation of test stand bioventing included installation of the bioventing wells and soil vapor probes, system startup and shutdown, and soil and soil gas sampling from July 14, 2014, through September 11, 2014. The Bravo Test Stand target treatment zone (TTZ), which had an estimated soil volume of approximately 260 $yd^3$, is located beside a steep rock outcrop that forms the southern physical boundary of the Bravo Area (red cross-hatched area on Figure 9-1). The basis of this volume estimate was the average alluvium thicknesses reported in local boring logs, multiplied by the approximate surface area of the test cell. Boring logs from soil sampling stations in the vicinity documented the soil as being a mostly dry, silty sand. The potentiometric surface of groundwater at this site is below the top-of-bedrock; saturated soil was not encountered within this area. The soil thickness within the test stand TTZ varies, with a maximum depth to bedrock of 6 feet bgs. Soil vapor probes (SVPs) and a bioventing (BV) well were planned to be installed to depths of 4 to 6 feet bgs. It was determined during installation that these areas primarily were located in a cut pad of the bedrock, in previously excavated trenches for pipelines and other operational purposes. Repeated shallow refusal encountered near the central area of the test stand TTZ forced a change to the original plan and layout of the PS area. These changes were discussed in a meeting with CH2M HILL, NASA, and the DTSC held on July 15, 2014, to determine a plan to move a limited treatability test in a different area. This new TTZ (blue cross-hatched area) and the final SVP and BV well locations are shown on Figure 9-1.

The test stand bioventing provided data to support the pneumatic viability of the technology, indicating that atmospheric oxygen moved substantial distances through backfilled trenches and did not leak appreciably through a paved ground surface. Following bioventing activities, soil and soil gas sample results indicated TPH was no longer present in the subsurface at the Bravo Test Stand area and that ISCO would not be warranted. Given these results, an alternative location was identified in the Bravo Skim Pond area to pilot test the combined bioventing/ISCO treatment process. As described in the work plan addendum (NASA, 2014d), the Bravo Skim Pond area was selected, given that TPH concentrations in soil exceed the screening levels.

Analytical data for soil gas and soil samples collected during Bravo Test Stand bioventing are provided in Appendix D. Parameters collected at each SVP during bioventing operations, including oxygen percentage, pressure, and photoionization detector (PID) readings, are provided in time-series graphs in Appendix D.

### 9.1.1 Combined Test Site Conditions

To demonstrate the applicability of the combined bioventing/ISCO technologies at SSFL sites, the test required a location of soil at least 5 feet in depth, with a presence of aerobically biodegradable compounds such as TPH. In addition, access for equipment and the availability of power were important for logistical feasibility. The Bravo Skim Pond area was selected because the soil depth is approximately 8 feet deep, it is in a relatively level area, does not lie within a traffic flow area, and electrical power is available through a connection to the groundwater extraction and treatment system. Two screening samples (BVBS1015RS002 and BVBS1015RS003) were collected on November 20, 2014, to verify the approximate depth to bedrock and to assess whether historically detected concentrations of TPH were still present at this location. Boring refusal at approximately 8 feet indicated the depth to bedrock. Samples were collected from depths of 4.5 to 5 feet and from 7.5 to 8 feet and analyzed for diesel-range TPH only. The maximum TPH concentration was 12,000 mg/kg of C8-C40 TPH in the shallower soil sample. The locations of these screening samples, the bioventing soil sampling, and the BV and SVP locations are shown on Figure 9-2. The above factors provided a reasonable expectation of being able to install and operate the bioventing well and to be able to install the three vapor probes as described in the November project work plan (NASA, 2014c).

## 9.1.2 Well Construction and Sampling

### 9.1.2.1 Well Construction

As shown on Figure 9-2, one BV well and three paired SVPs were installed on February 4, 2015. During drilling and installation, soil samples were collected from two separate intervals at each location to establish baseline soil conditions.

The BV well was constructed using 2-inch-diameter polyvinyl chloride Schedule 80 pipe, with a 5-foot section of 0.020-inch slotted screen from 3 to 8 feet bgs and #2/16 sand filter pack from 2.75 to 8 feet bgs. Moldable cement was placed on top of the screened interval from 2 to 2.75 feet bgs and tamped into place. The upper annulus around the casing was sealed with pourable cement from 0 to 2 feet bgs.

The SVPs were co-located shallow and deep pairs constructed using 1-inch-diameter polyvinyl chloride Schedule 40 pipes. The shallow probes were constructed with a 1.5-foot-long section of 0.020-inch slotted screen from 2.5 to 4 feet bgs and #2/16 sand filter pack from 2 to 4.5 feet bgs. The deep probes were constructed with a 2-foot-long section of 0.020-inch slotted screen from 6 to 8 feet bgs and #2/16 sand filter pack from 5.5 to 8 feet bgs. The deep and shallow probes were separated by an interval of bentonite slurry from 4.5 to 5.5 feet bgs and sealed at the surface from 0 to 2 feet bgs. Well construction details are summarized in Table 9-1.

Shallow refusal was encountered at 5.5 feet bgs during the attempted installation of SVP-7, originally planned to be located approximately 10 feet northeast of the BV well. An alternative location for SVP-7 was selected approximately 10 feet east-northeast of the BV well (as shown on Figure 9-2) where a total depth of 8 feet was achieved.

Three paired soil vapor probes (SVP-5a/b, SVP-6a/b, and SVP-7a/b) were installed in the Bravo Skim Pond area. SVPs with the letter “a” represent the shallower of the two paired probes, and those with the letter “b” represent the deeper of the paired probes.

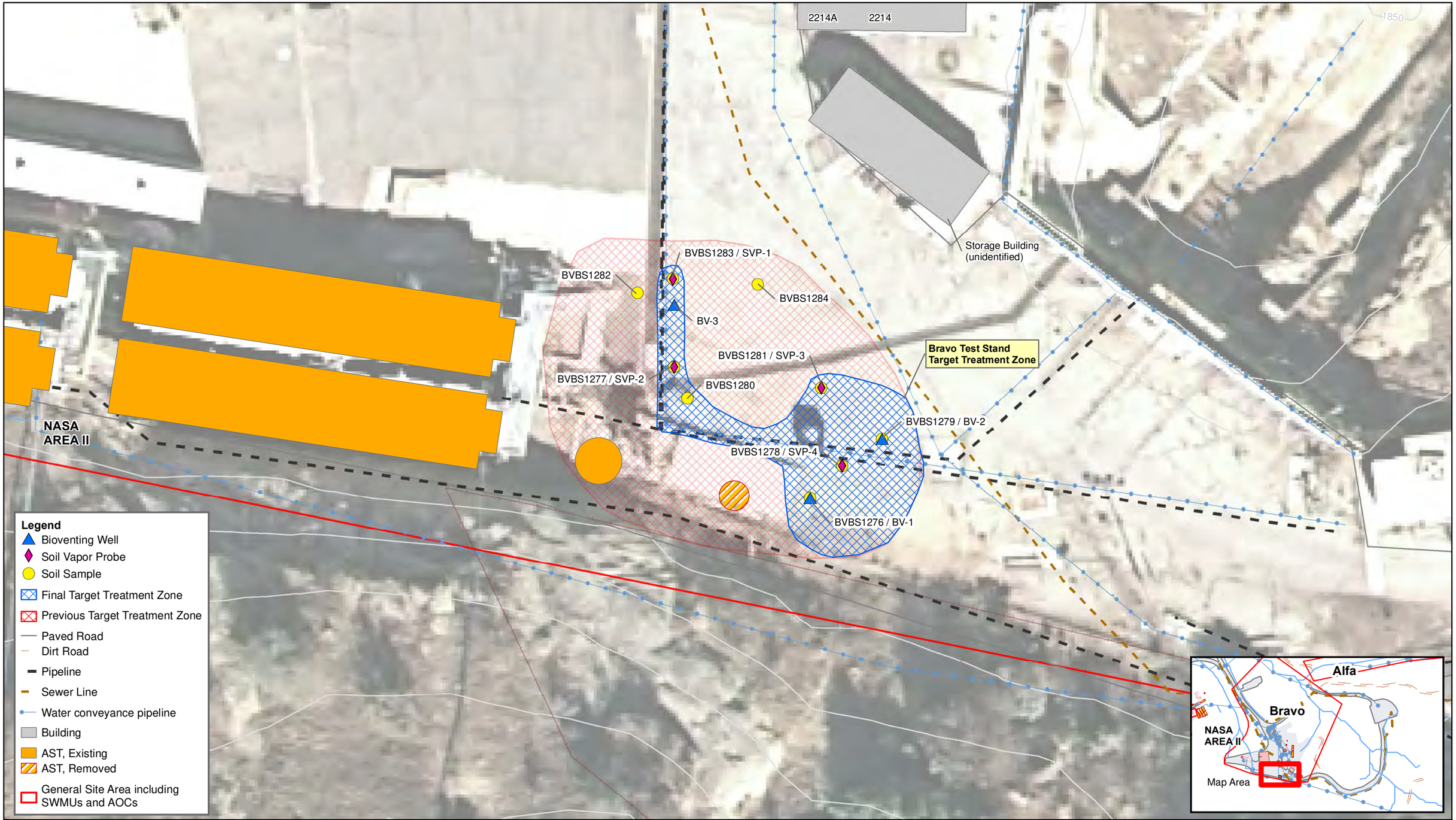
One additional paired piezometer (SVP-8a/b) and three additional soil sampling stations (BVBS1297, BVBS1298, and BVBS1299) were added to the bioventing PS area during the midpoint sampling event to support the ISCO phase of the PS. These locations are shown on Figure 9-2.

### 9.1.2.2 Soil Sampling

The installation of the BV well and the three paired SVPs included the collection of soil samples using a DPT Geoprobe drill rig. Baseline soil samples were collected from two depths at each of four locations to characterize baseline COC concentrations and further evaluate depth-to-bedrock in the TTZ, which ranged from approximately 5.5 to 8 feet. The sampled soil generally consisted of poorly graded sand and silty sand underlain by sandstone bedrock.

Soil samples were collected 3 weeks after bioventing began, which was the midpoint of bioventing operations, and following the completion of bioventing 6 weeks after bioventing began (Table 9-2). The baseline soil samples were analyzed for the following parameters:

- VOCs (EPA Method SW8260B)
- PAHs (EPA Method SW8270C-SIM)
- TPH (EPA Method SW8015B)
- Persulfate soil oxygen demand
- Total organic carbon (TOC) (EPA Method SW9060)
- General soil chemistry parameters




04-Nov-2015
Drawn By:
A. Cooley

**Figure 9-1**
**Bravo Test Stand Area - Bioventing Well, Soil Vapor Probe, Sample Location**
**Soil Treatability Studies Summary**
**Santa Susana Field Laboratory**
**Ventura County, California**

Map Document: O:\NASA\SSFL\maps\TreatabilityStudy\BRAVO_BioventTM_Wells_TSrpt.mxd

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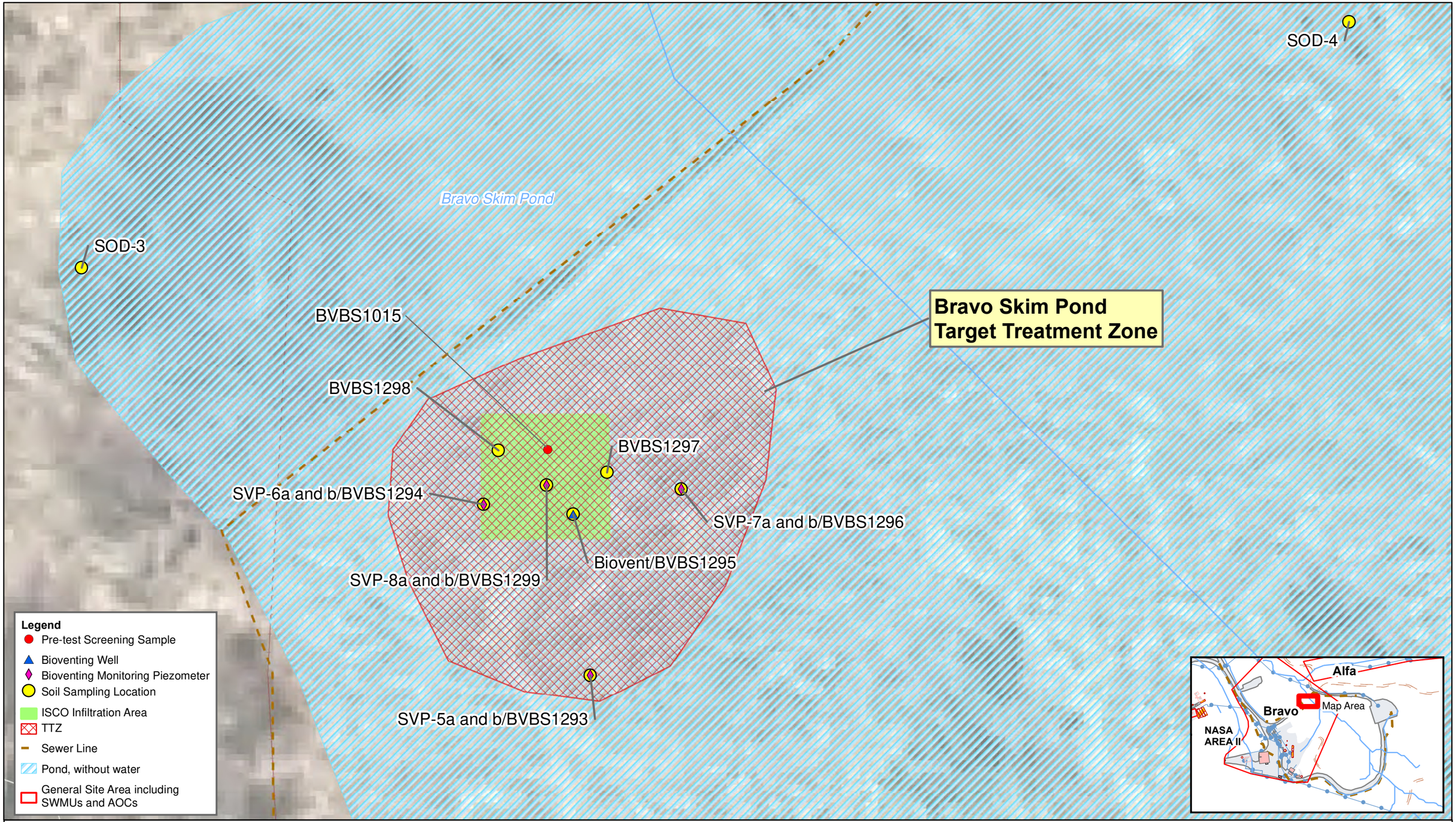


**Figure 9-2**
**Bravo Skim Pond Area - Bioventing Target Treatment Zone and ISCO Infiltration Area**
**Soil Treaability Studies Summary**
**Santa Susana Field Laboratory**
**Ventura County, California**

Map Document: O:\NASA\SSFL\maps\TreatabilityStudy\BRAVO_ISCOTM_TargetArea_TSrpt.mxd

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TABLE 9-1

**Well Construction Details**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Well ID | Associated Sample Location | TD (feet bgs) | Screened Interval (feet bgs) | #2/16 Sand Filter Pack (feet bgs) | Bentonite Slurry Seal (feet bgs) | Moldable Cement | Pourable Cement | Well Diameter (inches) | Screen Size (inches) | Moist (Y/N) | Visually Impacted (Y/N) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| SVP-5a | BVBS1293 | 4.5/8* | 2.5 — 4.0 | 2.0 — 4.5 | 0.0 — 2.0 | - | - | 1 | 0.020 | Y (wet 3.5 - 4) | Y |
| SVP-5b | BVBS1293 | 8.0 | 6.0 — 8.0 | 5.5 — 8.0 | 4.5 — 5.5 | - | - | 1 | 0.020 | Y (wet 3.5 - 4) | Y |
| SVP-6a | BVBS1294 | 4.5/8* | 2.5 — 4.0 | 2.0 — 4.5 | 0.0 — 2.0 | - | - | 1 | 0.020 | Y (wet 3.5 - 4) | N |
| SVP-6b | BVBS1294 | 4.0 | 6.0 — 8.0 | 5.5 — 8.0 | 4.5 — 5.5 | - | - | 1 | 0.020 | Y (wet 3.5 - 4) | Y |
| Biovent | BVBS1295 | 8.0 | 3.0 — 8.0 | 2.75 — 8.0 | - | 2.0 — 2.75 | 0 — 2 | 2 | 0.020 | Y (wet @ 5 feet) | Y (5.5 - 8) |
| SVP-7a | BVBS1296 | 4.5/8* | 2.5 — 4.0 | 2.0 — 4.5 | 0.0 — 2.0 | - | - | 1 | 0.020 | Y | N |
| SVP-7b | BVBS1296 | 8.0 | 6.0 — 8.0 | 5.5 — 8.0 | 4.5 — 5.5 | - | - | 1 | 0.020 | Y | Y |

Notes

* SVPs are co-located as shallow (a) and deep (b) pairs, hence, a TD of 4.5/8 means the shallow well annulus goes down to 4.5 feet before meeting the bentonite seal of the lower probe installed to 8 feet.

bgs = below ground surface

SVP = soil vapor probe

TD = total depth of boring

TABLE 9-2

**Baseline, Post-Bioventing/Pre-ISCO, and Post-ISCO Soil Sampling Summary**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Sample Station | Corresponding Well Location | Sample Identification | Sample Date | Sample Depth (feet) |
|---|---|---|---|---|
| BVBS1293 | SVP-5a/b | BVBS1293S001 | 4 Feb 2015 | 3 - 4 |
| BVBS1293 | SVP-5a/b | BVBS1293S003 | 3 Mar 2015 | 3 - 4 |
| BVBS1293 | SVP-5a/b | BVBS1293S005 | 10 Apr 2015 | 3 - 4 |
| BVBS1293 | SVP-5a/b | BVBS1293S002 | 4 Feb 2015 | 7 - 8 |
| BVBS1293 | SVP-5a/b | BVBS1293S004 | 3 Mar 2015 | 7 - 8 |
| BVBS1293 | SVP-5a/b | BVBS1293S006 | 10 Apr 2015 | 7 - 8 |
| BVBS1294 | SVP-6a/b | BVBS1294S001 | 4 Feb 2015 | 2 - 4 |
| BVBS1294 | SVP-6a/b | BVBS1294S003 | 3 Mar 2015 | 2 - 4 |
| BVBS1294 | SVP-6a/b | BVBS1294S005 | 10 Apr 2015 | 2 - 4 |
| BVBS1294 | SVP-6a/b | BVBS1294S007 | 18 Aug 2015 | 2 - 4 |
| BVBS1294 | SVP-6a/b | BVBS1294S002 | 4 Feb 2015 | 6 - 7 |
| BVBS1294 | SVP-6a/b | BVBS1294S004 | 3 Mar 2015 | 6 - 7 |
| BVBS1294 | SVP-6a/b | BVBS1294S006 | 10 Apr 2015 | 6 - 7 |
| BVBS1294 | SVP-6a/b | BVBS1294S008 | 18 Aug 2015 | 6 - 7 |
| BVBS1295 | BV well | BVBS1295S001 | 4 Feb 2015 | 2.5 - 4 |
| BVBS1295 | BV well | BVBS1295S003 | 3 Mar 2015 | 2.5 - 4.5 |
| BVBS1295 | BV well | BVBS1295S005 | 10 Apr 2015 | 2.5 - 4 |
| BVBS1295 | BV well | BVBS1295S007 | 18 Aug 2015 | 2.5 - 4 |
| BVBS1295 | BV well | BVBS1295S002 | 4 Feb 2015 | 5.5 - 7 |
| BVBS1295 | BV well | BVBS1295S004 | 3 Mar 2015 | 5.5 - 8 |
| BVBS1295 | BV well | BVBS1295S006 | 10 Apr 2015 | 5.5 - 8 |
| BVBS1295 | BV well | BVBS1295S008 | 18 Aug 2015 | 5.5 - 8 |
| BVBS1296 | SVP-7a/b | BVBS1296S001 | 4 Feb 2015 | 3 - 4 |
| BVBS1296 | SVP-7a/b | BVBS1296S003 | 3 Mar 2015 | 3 - 4 |
| BVBS1296 | SVP-7a/b | BVBS1296S005 | 10 Apr 2015 | 3 - 4 |
| BVBS1296 | SVP-7a/b | BVBS1296S002 | 4 Feb 2015 | 7 - 8 |
| BVBS1296 | SVP-7a/b | BVBS1296S004 | 3 Mar 2015 | 7 - 8 |
| BVBS1296 | SVP-7a/b | BVBS1296S006 | 10 Apr 2015 | 7 - 8 |
| BVBS1297 | - | BVBS1297S001 | 3 Mar 2015 | 4 - 5 |
| BVBS1297 | - | BVBS1297S003 | 10 Apr 2015 | 4 - 5 |
| BVBS1297 | - | BVBS1297S005 | 18 Aug 2015 | 4 - 5 |
| BVBS1297 | - | BVBS1297S002 | 3 Mar 2015 | 7 - 8 |
| BVBS1297 | - | BVBS1297S004 | 10 Apr 2015 | 7 - 8 |
| BVBS1297 | - | BVBS1297S006 | 18 Aug 2015 | 7 - 8 |
| BVBS1298 | - | BVBS1298S001 | 3 Mar 2015 | 4 - 5 |
| BVBS1298 | - | BVBS1298S003 | 10 Apr 2015 | 4 - 5 |
| BVBS1298 | - | BVBS1298S005 | 18 Aug 2015 | 4 - 5 |
| BVBS1298 | - | BVBS1298S002 | 3 Mar 2015 | 7 - 8 |
| BVBS1298 | - | BVBS1298S004 | 10 Apr 2015 | 6 - 8 |
| BVBS1298 | - | BVBS1298S006 | 18 Aug 2015 | 6 - 8 |
| BVBS1299 | SVP-8a/b | BVBS1299S001 | 3 Mar 2015 | 4 - 5.5 |
| BVBS1299 | SVP-8a/b | BVBS1299S003 | 10 Apr 2015 | 4 - 5.5 |

TABLE 9-2

**Baseline, Post-Bioventing/Pre-ISCO, and Post-ISCO Soil Sampling Summary**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Sample Station | Corresponding Well Location | Sample Identification | Sample Date | Sample Depth (feet) |
|---|---|---|---|---|
| BVBS1299 | SVP-8a/b | BVBS1299S005 | 18 Aug 2015 | 4 - 5.5 |
| BVBS1299 | SVP-8a/b | BVBS1299S002 | 3 Mar 2015 | 7 - 8 |
| BVBS1299 | SVP-8a/b | BVBS1299S004 | 10 Apr 2015 | 7 - 8 |
| BVBS1299 | SVP-8a/b | BVBS1299S006 | 18 Aug 2015 | 7 - 8 |
| BVBS1015R | - | BVBS1015RS002 | 20 Nov 2014 | 4.5 - 5 |
| BVBS1015R | - | BVBS1015RS003 | 20 Nov 2014 | 7.5 - 8 |

Notes:
SVP = soil vapor probe
BV = biovent (well)

Midpoint and final soil samples were analyzed for the following parameters:

- VOCs (EPA Method SW8260B)
- PAHs (EPA Method SW8270C-SIM)
- TPH (EPA Method SW8015B)
- General soil chemistry parameters

Soil boring logs are provided in Appendix E-1. Soil samples collected for Method 8260B and SW8015-P were collected using 5-gram EnCore samplers with a T-handle locking device in accordance with SSFL Standard Operating Procedures. Soil samples collected for Method 8270C-SIM were collected directly from a stainless steel sleeve (no acetate liner was used for these samples). Soil samples were containerized using decontaminated stainless steel trays, bowls, and spoons.

Over the duration of the biovent TS, a total of 49 soil and soil gas samples were collected, consisting of 38 normal samples, 5 field duplicates, 3 split samples, and 3 matrix spike/matrix spike duplicate (MS/MSD) samples. Split soil samples were shipped to Eurofins CalScience, Inc. in Garden Grove, California, for analysis. All other soil samples were shipped to EMAX Laboratories, Inc., in Torrance, California, for analysis. Air samples were collected into Summa canisters and delivered to ALS Environmental in Simi Valley, California, for analysis by Method TO-15. Following decontamination of the drilling and sampling equipment, equipment blanks were collected by running de-ionized water over the sampling equipment and containerizing the water in appropriate pre-cleaned sample containers. The laboratories used for this PS are certified by the California Department of Public Health Environmental Laboratory Accreditation Program. The soil sampling analysis results for detected constituents are summarized in Table 9-3. The results for all analyses are summarized in Appendix E-2.

Two additional soil samples were collected from the Bravo Skim Pond area on February 4, 2015, for soil oxygen demand (SOD) analysis. Samples SOD-3 and SOD-4 were collected at depths of approximately 2 to 4 feet using a Geoprobe DPT drill rig. The sample stations shown on Figure 9-2 were selected where soil was known not to contain high concentrations of COCs. The samples were submitted to PeroxyChem Environmental Solutions in Mississauga, Ontario, and the SOD analysis results were used to calculate the appropriate persulfate dosing for the ISCO portion of this PS (PeroxyChem, 2015).

#### 9.1.2.3 Soil Vapor Sampling

The deeper SVPs were sampled per the DTSC-approved Soil Vapor Standard Operating Procedure for SVPs; however, flow was insufficient at the high vacuum created during the sampling process at two of the three deep SVPs (SVP-5b and SVP-7b); therefore, vapor sample collection was not possible. Soil gas samples were scheduled to be collected concurrently with the soil samples described previously during the baseline, midpoint, and final sampling events; however, soil gas sampling was unsuccessful during the midpoint sampling event because of insufficient flow while purging air from this probe. Days prior to this attempt, the soil gas sampling event was postponed because of 1.44 inches of rain measured at SSFL for March 1 to 3, 2015. This significant rain event may

have limited the flow of soil gas to the sample container for the midpoint sampling activities; however, a soil gas sample was successfully collected during the final sampling event at SVP-6b. Field parameters from the shallow SVPs were monitored daily using a PID and an oxygen sensor. Parameters also were monitored in SVP-6b for comparison purposes and to demonstrate a separation between the upper and lower alluvial zones.

## 9.1.3 Bioventing Pilot Testing

### 9.1.3.1 Blower and Compressor Arrangement

To deliver air to the biovent injection well, a blower and air compressor were obtained from Praxis Environmental Technologies, in Burlingame, California. A power source capable of powering the 1.0-horsepower, 230-volt, 6-amp blower is located at monitoring well HAR-20, just east of the Alfa/Bravo Skim Pond. To avoid a drop in voltage over the approximate 300 feet distance to the Bravo Skim Pond test area, a 2-inch-diameter continuous HDPE pipe was used to deliver air from the blower located at HAR-20 to the biovent injection well. This 2-inch pipe was connected directly to the biovent manifold.

A portable Honda 3000i generator was used to power a 120-volt, 12-amp reciprocating air compressor for the purpose of intermittent pressure-pulsing the subsurface via short bursts of air delivered through the BV well. To assist with optimizing the air delivery and pressure pulsing of the subsurface, a technologist from Praxis Environmental Technologies was onsite during the start of the biovent system on February 6, 2015, to operate the compressor used for this application.

### 9.1.3.2 Compressor Tests

During the pressure pulsing attempts, observed pressure reading spikes of 2 to 3 inches of water were noted that dissipated seconds after the higher pressure was introduced from the compressor. Modifications were made to the compressor's air delivery system in an attempt to induce a sustained increase in pressure by approximately 10 inches of water at the BV well head. At a maximum pressure of 60 pounds per square inch, the observed pressure reading spikes of 2 to 3 inches of water pressure again dissipated seconds after the higher pressure was introduced. The decision was made to discontinue the use of this compressor given the negligible results, and it was removed from the injection manifold and well head on February 6, 2015, 2 hours after bioventing began. For the remainder of the TS, the blower alone delivered air to the BV well.

### 9.1.3.3 Operations Schedule

Generally, bioventing activities in the Bravo Skim Pond ran continuously Monday through Friday, from February 6, 2015, to March 26, 2015. The system was shut down for weekends, during the oxygen uptake test, and during any scheduled soil and soil gas sampling events. During the weekend of February 21 to 22, 2015, the biovent system ran continuously. Days of operations and run times are summarized in Appendix E-3.

TABLE 9-3
**Detected Analytical Data 2015 Biovent Soil Sampling**
*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (feet) | Method | Class | Analyte | Final Result | MDL | RL | SL | Units | Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| GS | SVP-6b | BVSVP6SVD002 | FD | 13 Apr 2015 | 6 - 8 | TO15 | OTHER | C7 as n-Heptane | 570 J | | 530 | | µg/m3 | | NC |
| GS | SVP-6b | BVSVP6SVD002 | FD | 13 Apr 2015 | 6 - 8 | TO15 | OTHER | Dodecane | 17000 = | | 530 | | µg/m3 | | NC |
| GS | SVP-6b | BVSVP6SVD002 | FD | 13 Apr 2015 | 6 - 8 | TO15 | OTHER | n-Decane | 29000 J | | 530 | | µg/m3 | | NC |
| GS | SVP-6b | BVSVP6SVD002 | FD | 13 Apr 2015 | 6 - 8 | TO15 | VOC | n-Octane | 4900 J | | 530 | | µg/m3 | | NC |
| GS | SVP-6b | BVSVP6SVD002 | FD | 13 Apr 2015 | 6 - 8 | TO15 | OTHER | Nonane | 17000 J | | 530 | | µg/m3 | | NC |
| GS | SVP-6b | BVSVP6SVD002 | FD | 13 Apr 2015 | 6 - 8 | TO15 | OTHER | Undecane | 37000 = | | 530 | | µg/m3 | | NC |
| GS | SVP-6b | BVSVP6SVS002 | N | 13 Apr 2015 | 6 - 8 | TO15 | OTHER | C7 as n-Heptane | 1400 J | | 1000 | | µg/m3 | | NC |
| GS | SVP-6b | BVSVP6SVS002 | N | 13 Apr 2015 | 6 - 8 | TO15 | OTHER | Dodecane | 15000 = | | 1000 | | µg/m3 | | NC |
| GS | SVP-6b | BVSVP6SVS002 | N | 13 Apr 2015 | 6 - 8 | TO15 | OTHER | n-Decane | 57000 J | | 1000 | | µg/m3 | | NC |
| GS | SVP-6b | BVSVP6SVS002 | N | 13 Apr 2015 | 6 - 8 | TO15 | VOC | n-Octane | 12000 J | | 1000 | | µg/m3 | | NC |
| GS | SVP-6b | BVSVP6SVS002 | N | 13 Apr 2015 | 6 - 8 | TO15 | OTHER | Nonane | 35000 J | | 1000 | | µg/m3 | | NC |
| GS | SVP-6b | BVSVP6SVS002 | N | 13 Apr 2015 | 6 - 8 | TO15 | OTHER | Undecane | 43000 = | | 1000 | | µg/m3 | | NC |
| SO | BVBS1293 | BVBS1293S001 | N | 4 Feb 2015 | 3 - 4 | SW8015B | HC | Diesel Range Organics (C15-C20) | **12000 =** | 3000 | 6100 | 5000 | µg/kg | X | Y |
| SO | BVBS1293 | BVBS1293S001 | N | 4 Feb 2015 | 3 - 4 | SW8015B | HC | Diesel Range Organics (C21-C30) | **7700 =** | 3000 | 6100 | 5000 | µg/kg | X | Y |
| SO | BVBS1293 | BVBS1293S001 | N | 4 Feb 2015 | 3 - 4 | SW8015B | HC | TOTAL EFH(C8-C40) | **24000 =** | 3000 | 6100 | 10000 | µg/kg | X | Y |
| SO | BVBS1293 | BVBS1293S001 | N | 4 Feb 2015 | 3 - 4 | SW8270C-SIM | PAH | Anthracene | **9.5 J** | 6.1 | 12 | 2.5 | µg/kg | X | Y |
| SO | BVBS1293 | BVBS1293S001 | N | 4 Feb 2015 | 3 - 4 | SW8270C-SIM | PAH | Benzo(a)pyrene | 27 = | 6.1 | 12 | | µg/kg | | NC |
| SO | BVBS1293 | BVBS1293S001 | N | 4 Feb 2015 | 3 - 4 | SW8270C-SIM | PAH | Benzo(b)fluoranthene | 39 = | 6.1 | 12 | | µg/kg | | NC |
| SO | BVBS1293 | BVBS1293S001 | N | 4 Feb 2015 | 3 - 4 | SW8270C-SIM | PAH | Benzo(ghi)perylene | **62 =** | 6.1 | 12 | 2.5 | µg/kg | X | Y |
| SO | BVBS1293 | BVBS1293S001 | N | 4 Feb 2015 | 3 - 4 | SW8270C-SIM | PHTH | Bis(2-ethylhexyl)phthalate | **1200 =** | 12 | 24 | 61 | µg/kg | X | Y |
| SO | BVBS1293 | BVBS1293S001 | N | 4 Feb 2015 | 3 - 4 | SW8270C-SIM | PAH | Fluoranthene | **37 =** | 6.1 | 12 | 5.2 | µg/kg | X | Y |
| SO | BVBS1293 | BVBS1293S001 | N | 4 Feb 2015 | 3 - 4 | SW8270C-SIM | PAH | Indeno(1,2,3-cd)pyrene | 38 = | 6.1 | 12 | | µg/kg | | NC |
| SO | BVBS1293 | BVBS1293S001 | N | 4 Feb 2015 | 3 - 4 | SW8270C-SIM | PAH | PAHTEQM | **34.7 =** | | | 4.47 | µg/kg | X | Y |
| SO | BVBS1293 | BVBS1293S001 | N | 4 Feb 2015 | 3 - 4 | SW8270C-SIM | PAH | Phenanthrene | **15 =** | 6.1 | 12 | 3.9 | µg/kg | X | Y |
| SO | BVBS1293 | BVBS1293S001 | N | 4 Feb 2015 | 3 - 4 | SW8270C-SIM | PAH | Pyrene | **120 =** | 6.1 | 12 | 5.6 | µg/kg | X | Y |
| SO | BVBS1293 | BVBS1293S001 | N | 4 Feb 2015 | 3 - 4 | Walkley-Black | GENCHEM | Total Organic Carbon | 1850 = | 724 | 724 | | mg/kg | | NC |
| SO | BVBS1293 | BVBS1293S001SP | FS | 4 Feb 2015 | 3 - 4 | SW8015B | HC | Diesel Range Organics (C12-C14) | 3100 J | 1600 | 5100 | 5000 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S001SP | FS | 4 Feb 2015 | 3 - 4 | SW8015B | HC | Diesel Range Organics (C15-C20) | 4900 J | 1600 | 5100 | 5000 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S001SP | FS | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | Acetone | 12 J | 5.6 | 18 | 20 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S001SP | FS | 4 Feb 2015 | 3 - 4 | SW8270C-SIM | PHTH | Bis(2-ethylhexyl)phthalate | 56 = | 4.1 | 10 | 61 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S001SP | FS | 4 Feb 2015 | 3 - 4 | SW8270C-SIM | PHTH | Butyl benzyl phthalate | 6 J | 4.4 | 10 | 100 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S001SP | FS | 4 Feb 2015 | 3 - 4 | SW8270C-SIM | PHTH | Dimethyl phthalate | **350 =** | 5.4 | 10 | 27 | µg/kg | X | Y |
| SO | BVBS1293 | BVBS1293S001SP | FS | 4 Feb 2015 | 3 - 4 | SW8270C-SIM | PHTH | Di-n-butyl phthalate | 10 = | 5.2 | 10 | 27 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S001SP | FS | 4 Feb 2015 | 3 - 4 | SW9045D | GENCHEM | pH | 7.35 = | | | | pH units | | NC |
| SO | BVBS1293 | BVBS1293S001SP | FS | 4 Feb 2015 | 3 - 4 | SW9060 | GENCHEM | Total Organic Carbon | 4150 = | 33.3 | 100 | | mg/kg | | NC |
| SO | BVBS1293 | BVBS1293S002 | N | 4 Feb 2015 | 7 - 8 | SW8015B | HC | Total EFH(C8-C40) | 3700 J | 2900 | 5800 | 10000 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S002 | N | 4 Feb 2015 | 7 - 8 | SW8260B | VOC | Acetone | 12 J | 4.8 | 19 | 20 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S002 | N | 4 Feb 2015 | 7 - 8 | Walkley-Black | GENCHEM | Total Organic Carbon | 1810 = | 666 | 666 | | mg/kg | | NC |
| SO | BVBS1293 | BVBS1293S003 | N | 3 Mar 2015 | 3 - 4 | SW8015B | HC | Total EFH(C8-C40) | 5400 J | 2800 | 5500 | 10000 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S003 | N | 3 Mar 2015 | 3 - 4 | SW8270C-SIM | PAH | Benzo(a)anthracene | 8.5 J | 5.5 | 11 | | µg/kg | | NC |
| SO | BVBS1293 | BVBS1293S003 | N | 3 Mar 2015 | 3 - 4 | SW8270C-SIM | PAH | Benzo(a)pyrene | 8.3 J | 5.5 | 11 | | µg/kg | | NC |
| SO | BVBS1293 | BVBS1293S003 | N | 3 Mar 2015 | 3 - 4 | SW8270C-SIM | PAH | Benzo(b)fluoranthene | 7.5 J | 5.5 | 11 | | µg/kg | | NC |
| SO | BVBS1293 | BVBS1293S003 | N | 3 Mar 2015 | 3 - 4 | SW8270C-SIM | PAH | Benzo(ghi)perylene | **23 =** | 5.5 | 11 | 2.5 | µg/kg | X | Y |
| SO | BVBS1293 | BVBS1293S003 | N | 3 Mar 2015 | 3 - 4 | SW8270C-SIM | PHTH | Bis(2-ethylhexyl)phthalate | **110 =** | 11 | 22 | 61 | µg/kg | X | Y |
| SO | BVBS1293 | BVBS1293S003 | N | 3 Mar 2015 | 3 - 4 | SW8270C-SIM | PAH | Chrysene | 5.6 J | 5.5 | 11 | | µg/kg | | NC |
| SO | BVBS1293 | BVBS1293S003 | N | 3 Mar 2015 | 3 - 4 | SW8270C-SIM | PAH | Fluoranthene | **6.9 J** | 5.5 | 11 | 5.2 | µg/kg | X | Y |

TABLE 9-3
**Detected Analytical Data 2015 Biovent Soil Sampling**
*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (feet) | Method | Class | Analyte | Final Result | MDL | RL | SL | Units | Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1293 | BVBS1293S003 | N | 3 Mar 2015 | 3 - 4 | SW8270C-SIM | PAH | Indeno(1,2,3-cd)pyrene | 14 = | 5.5 | 11 | | µg/kg | | NC |
| SO | BVBS1293 | BVBS1293S003 | N | 3 Mar 2015 | 3 - 4 | SW8270C-SIM | PAH | PAHTEQM | **11.356 =** | | | 4.47 | µg/kg | X | Y |
| SO | BVBS1293 | BVBS1293S003 | N | 3 Mar 2015 | 3 - 4 | SW8270C-SIM | PAH | Pyrene | **13 J** | 5.5 | 11 | 5.6 | µg/kg | X | Y |
| SO | BVBS1293 | BVBS1293S003 | N | 3 Mar 2015 | 3 - 4 | SW9045D | GENCHEM | pH | 7.51 = | | | | pH units | | NC |
| SO | BVBS1293 | BVBS1293S004 | N | 3 Mar 2015 | 7 - 8 | SW8015B | HC | Diesel Range Organics (C21-C30) | 2800 J | 2700 | 5400 | 5000 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S004 | N | 3 Mar 2015 | 7 - 8 | SW8015B | HC | Total EFH(C8-C40) | 8800 = | 2700 | 5400 | 10000 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S004 | N | 3 Mar 2015 | 7 - 8 | SW8270C-SIM | PHTH | Bis(2-ethylhexyl)phthalate | 25 = | 11 | 22 | 61 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S004 | N | 3 Mar 2015 | 7 - 8 | SW9045D | GENCHEM | pH | 6.41 = | | | | pH units | | NC |
| SO | BVBS1293 | BVBS1293S005 | N | 10 Apr 2015 | 3 - 4 | M8015D | HC | Diesel Range Organics (C15-C20) | **8100 =** | 2900 | 5800 | 5000 | µg/kg | X | Y |
| SO | BVBS1293 | BVBS1293S005 | N | 10 Apr 2015 | 3 - 4 | M8015D | HC | Diesel Range Organics (C21-C30) | **9600 =** | 2900 | 5800 | 5000 | µg/kg | X | Y |
| SO | BVBS1293 | BVBS1293S005 | N | 10 Apr 2015 | 3 - 4 | SW8260B | VOC | 1,1,1-Trichloroethane | **5.2 =** | 1 | 5 | 5 | µg/kg | X | Y |
| SO | BVBS1293 | BVBS1293S005 | N | 10 Apr 2015 | 3 - 4 | SW8260B | VOC | 1,1-Dichloroethane | 1.3 J | 1 | 5 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S005 | N | 10 Apr 2015 | 3 - 4 | SW8260B | VOC | Acetone | 13 J | 5 | 20 | 20 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S005 | N | 10 Apr 2015 | 3 - 4 | SW8260B | VOC | Methylene chloride | 2.4 J | 2 | 10 | 10 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S005 | N | 10 Apr 2015 | 3 - 4 | SW8270C-SIM | PAH | Benzo(ghi)perylene | **6.5 J** | 5.8 | 12 | 2.5 | µg/kg | X | Y |
| SO | BVBS1293 | BVBS1293S005 | N | 10 Apr 2015 | 3 - 4 | SW8270C-SIM | PAH | Pyrene | **7.7 J** | 5.8 | 12 | 5.6 | µg/kg | X | Y |
| SO | BVBS1293 | BVBS1293S005 | N | 10 Apr 2015 | 3 - 4 | SW9045D | GENCHEM | pH | 6.49 = | | | | pH units | | NC |
| SO | BVBS1293 | BVBS1293S006 | N | 10 Apr 2015 | 7 - 8 | M8015D | HC | Diesel Range Organics (C12-C14) | 4000 J | 2900 | 5800 | 5000 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S006 | N | 10 Apr 2015 | 7 - 8 | M8015D | HC | Diesel Range Organics (C15-C20) | 4600 J | 2900 | 5800 | 5000 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S006 | N | 10 Apr 2015 | 7 - 8 | M8015D | HC | Diesel Range Organics (C21-C30) | 3400 J | 2900 | 5800 | 5000 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S006 | N | 10 Apr 2015 | 7 - 8 | SW8015B | HC | GRO (C4-C12) | **1700 =** | 470 | 930 | 1000 | µg/kg | X | Y |
| SO | BVBS1293 | BVBS1293S006 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | Acetone | 10 J | 4.8 | 19 | 20 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S006 | N | 10 Apr 2015 | 7 - 8 | SW9045D | GENCHEM | pH | 7.1 = | | | | pH units | | NC |
| SO | BVBS1294 | BVBS1294D003 | FD | 3 Mar 2015 | 2 - 4 | SW8015B | HC | Diesel Range Organics (C12-C14) | **19000 =** | 3000 | 5900 | 5000 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294D003 | FD | 3 Mar 2015 | 2 - 4 | SW8015B | HC | Diesel Range Organics (C15-C20) | **55000 =** | 3000 | 5900 | 5000 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294D003 | FD | 3 Mar 2015 | 2 - 4 | SW8015B | HC | Diesel Range Organics (C21-C30) | **8200 =** | 3000 | 5900 | 5000 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294D003 | FD | 3 Mar 2015 | 2 - 4 | SW8015B | HC | TOTAL EFH(C8-C40) | **84000 =** | 3000 | 5900 | 10000 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294D003 | FD | 3 Mar 2015 | 2 - 4 | SW8270C-SIM | PAH | Benzo(ghi)perylene | **9.6 J** | 5.9 | 12 | 2.5 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294D003 | FD | 3 Mar 2015 | 2 - 4 | SW8270C-SIM | PHTH | Bis(2-ethylhexyl)phthalate | **110 J** | 12 | 24 | 61 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294D003 | FD | 3 Mar 2015 | 2 - 4 | SW8270C-SIM | PAH | Fluoranthene | **12 J** | 5.9 | 12 | 5.2 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294D003 | FD | 3 Mar 2015 | 2 - 4 | SW8270C-SIM | PAH | Indeno(1,2,3-cd)pyrene | 6.6 J | 5.9 | 12 | | µg/kg | | NC |
| SO | BVBS1294 | BVBS1294D003 | FD | 3 Mar 2015 | 2 - 4 | SW8270C-SIM | PAH | PAHTEQM | 0.66 = | | | 4.47 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D003 | FD | 3 Mar 2015 | 2 - 4 | SW8270C-SIM | PAH | Pyrene | **15 J** | 5.9 | 12 | 5.6 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294D003 | FD | 3 Mar 2015 | 2 - 4 | SW9045D | GENCHEM | pH | 5.86 = | | | | pH units | | NC |
| SO | BVBS1294 | BVBS1294D005 | FD | 10 Apr 2015 | 2 - 4 | M8015D | HC | Diesel Range Organics (C12-C14) | **5100 J** | 2800 | 5500 | 5000 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294D005 | FD | 10 Apr 2015 | 2 - 4 | M8015D | HC | Diesel Range Organics (C15-C20) | **31000 J** | 2800 | 5500 | 5000 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294D005 | FD | 10 Apr 2015 | 2 - 4 | M8015D | HC | Diesel Range Organics (C21-C30) | **12000 =** | 2800 | 5500 | 5000 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294D005 | FD | 10 Apr 2015 | 2 - 4 | SW8015B | HC | GRO (C4-C12) | 790 J | 510 | 1000 | 1000 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D005 | FD | 10 Apr 2015 | 2 - 4 | SW8270C-SIM | PAH | Benzo(ghi)perylene | **6.4 J** | 5.5 | 11 | 2.5 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294D005 | FD | 10 Apr 2015 | 2 - 4 | SW9045D | GENCHEM | pH | 6.46 = | | | | pH units | | NC |
| SO | BVBS1294 | BVBS1294S001 | N | 4 Feb 2015 | 2 - 4 | SW8015B | HC | Diesel Range Organics (C21-C30) | **8000 =** | 2900 | 5800 | 5000 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S001 | N | 4 Feb 2015 | 2 - 4 | SW8015B | HC | GRO (C4-C12) | **9400 =** | 480 | 970 | 1000 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S001 | N | 4 Feb 2015 | 2 - 4 | SW8015B | HC | Total EFH(C8-C40) | **15000 =** | 2900 | 5800 | 10000 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S001 | N | 4 Feb 2015 | 2 - 4 | SW8270C-SIM | PAH | Benzo(ghi)perylene | **8.2 J** | 5.8 | 12 | 2.5 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S001 | N | 4 Feb 2015 | 2 - 4 | Walkley-Black | GENCHEM | Total Organic Carbon | 3300 = | 681 | 681 | | mg/kg | | NC |
| SO | BVBS1294 | BVBS1294S002 | N | 4 Feb 2015 | 6 - 7 | SW8015B | HC | Diesel Range Organics (C12-C14) | **4500000 =** | 30000 | 61000 | 5000 | µg/kg | X | Y |

TABLE 9-3
**Detected Analytical Data 2015 Biovent Soil Sampling**
*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (feet) | Method | Class | Analyte | Final Result | MDL | RL | SL | Units | Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1294 | BVBS1294S002 | N | 4 Feb 2015 | 6 - 7 | SW8015B | HC | Diesel Range Organics (C15-C20) | **3000000 =** | 30000 | 61000 | 5000 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S002 | N | 4 Feb 2015 | 6 - 7 | SW8015B | HC | Diesel Range Organics (C21-C30) | **68000 =** | 30000 | 61000 | 5000 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S002 | N | 4 Feb 2015 | 6 - 7 | SW8015B | HC | Diesel Range Organics (C8-C11) | **1500000 =** | 30000 | 61000 | 1000 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S002 | N | 4 Feb 2015 | 6 - 7 | SW8015B | HC | GRO (C4-C12) | **2000000 =** | 19000 | 39000 | 1000 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S002 | N | 4 Feb 2015 | 6 - 7 | SW8015B | HC | Total EFH(C8-C40) | **9000000 =** | 30000 | 61000 | 10000 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S002 | N | 4 Feb 2015 | 6 - 7 | SW8260B | VOC | 1,2,4-Trimethylbenzene | **5.7 J** | 0.99 | 5 | 5 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S002 | N | 4 Feb 2015 | 6 - 7 | SW8260B | VOC | 1,3,5-Trimethylbenzene | 2.1 J | 0.99 | 5 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S002 | N | 4 Feb 2015 | 6 - 7 | SW8260B | VOC | Acetone | **23 J** | 5 | 20 | 20 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S002 | N | 4 Feb 2015 | 6 - 7 | SW8260B | VOC | Ethylbenzene | **6.6 J** | 0.99 | 5 | 5 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S002 | N | 4 Feb 2015 | 6 - 7 | SW8260B | VOC | m,p-Xylenes | 3.1 J | 2 | 5 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S002 | N | 4 Feb 2015 | 6 - 7 | SW8260B | VOC | Methylene chloride | 2 J | 2 | 9.9 | 10 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S002 | N | 4 Feb 2015 | 6 - 7 | SW8260B | VOC | n-butylbenzene | **11 J** | 0.99 | 5 | 5 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S002 | N | 4 Feb 2015 | 6 - 7 | SW8260B | VOC | n-Propylbenzene | **12 J** | 0.99 | 5 | 5 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S002 | N | 4 Feb 2015 | 6 - 7 | SW8260B | VOC | o-Xylene | 5 J | 0.99 | 5 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S002 | N | 4 Feb 2015 | 6 - 7 | SW8260B | VOC | p-Isopropyltoluene | 4.2 J | 0.99 | 5 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S002 | N | 4 Feb 2015 | 6 - 7 | SW8260B | VOC | sec-Butylbenzene | **16 J** | 0.99 | 5 | 5 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S002 | N | 4 Feb 2015 | 6 - 7 | SW8260B | VOC | tert-Butylbenzene | 1.5 J | 0.99 | 5 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S002 | N | 4 Feb 2015 | 6 - 7 | SW8260B | VOC | Toluene | 1.2 J | 0.99 | 5 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S002 | N | 4 Feb 2015 | 6 - 7 | SW8270C-SIM | PAH | Anthracene | **84 J** | 6.1 | 12 | 2.5 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S002 | N | 4 Feb 2015 | 6 - 7 | SW8270C-SIM | PAH | Benzo(a)pyrene | 79 J | 6.1 | 12 | | µg/kg | | NC |
| SO | BVBS1294 | BVBS1294S002 | N | 4 Feb 2015 | 6 - 7 | SW8270C-SIM | PAH | Benzo(b)fluoranthene | 92 J | 6.1 | 12 | | µg/kg | | NC |
| SO | BVBS1294 | BVBS1294S002 | N | 4 Feb 2015 | 6 - 7 | SW8270C-SIM | PAH | Benzo(ghi)perylene | **120 J** | 6.1 | 12 | 2.5 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S002 | N | 4 Feb 2015 | 6 - 7 | SW8270C-SIM | PAH | Benzo(k)fluoranthene | 16 J | 6.1 | 12 | | µg/kg | | NC |
| SO | BVBS1294 | BVBS1294S002 | N | 4 Feb 2015 | 6 - 7 | SW8270C-SIM | PHTH | Bis(2-ethylhexyl)phthalate | **1800 J** | 12 | 24 | 61 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S002 | N | 4 Feb 2015 | 6 - 7 | SW8270C-SIM | PAH | Chrysene | 48 J | 6.1 | 12 | | µg/kg | | NC |
| SO | BVBS1294 | BVBS1294S002 | N | 4 Feb 2015 | 6 - 7 | SW8270C-SIM | PAH | Fluoranthene | **350 J** | 6.1 | 12 | 5.2 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S002 | N | 4 Feb 2015 | 6 - 7 | SW8270C-SIM | PAH | Indeno(1,2,3-cd)pyrene | 66 J | 6.1 | 12 | | µg/kg | | NC |
| SO | BVBS1294 | BVBS1294S002 | N | 4 Feb 2015 | 6 - 7 | SW8270C-SIM | PAH | PAHTEQM | **96.88 =** | | | 4.47 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S002 | N | 4 Feb 2015 | 6 - 7 | SW8270C-SIM | PAH | Phenanthrene | **360 J** | 6.1 | 12 | 3.9 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S002 | N | 4 Feb 2015 | 6 - 7 | SW8270C-SIM | PAH | Pyrene | **450 J** | 6.1 | 12 | 5.6 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S002 | N | 4 Feb 2015 | 6 - 7 | Walkley-Black | GENCHEM | Total Organic Carbon | 13800 = | 1420 | 1420 | | mg/kg | | NC |
| SO | BVBS1294 | BVBS1294S003 | N | 3 Mar 2015 | 2 - 4 | SW8015B | HC | Diesel Range Organics (C12-C14) | **17000 =** | 3100 | 6300 | 5000 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S003 | N | 3 Mar 2015 | 2 - 4 | SW8015B | HC | Diesel Range Organics (C15-C20) | **54000 =** | 3100 | 6300 | 5000 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S003 | N | 3 Mar 2015 | 2 - 4 | SW8015B | HC | Diesel Range Organics (C21-C30) | **13000 =** | 3100 | 6300 | 5000 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S003 | N | 3 Mar 2015 | 2 - 4 | SW8015B | HC | Total EFH(C8-C40) | **88000 =** | 3100 | 6300 | 10000 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S003 | N | 3 Mar 2015 | 2 - 4 | SW8270C-SIM | PAH | Anthracene | **6.7 J** | 6.3 | 13 | 2.5 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S003 | N | 3 Mar 2015 | 2 - 4 | SW8270C-SIM | PAH | Benzo(a)anthracene | 17 = | 6.3 | 13 | | µg/kg | | NC |
| SO | BVBS1294 | BVBS1294S003 | N | 3 Mar 2015 | 2 - 4 | SW8270C-SIM | PAH | Benzo(a)pyrene | 10 J | 6.3 | 13 | | µg/kg | | NC |
| SO | BVBS1294 | BVBS1294S003 | N | 3 Mar 2015 | 2 - 4 | SW8270C-SIM | PAH | Benzo(b)fluoranthene | 14 = | 6.3 | 13 | | µg/kg | | NC |
| SO | BVBS1294 | BVBS1294S003 | N | 3 Mar 2015 | 2 - 4 | SW8270C-SIM | PAH | Benzo(ghi)perylene | **26 =** | 6.3 | 13 | 2.5 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S003 | N | 3 Mar 2015 | 2 - 4 | SW8270C-SIM | PHTH | Bis(2-ethylhexyl)phthalate | **380 J** | 13 | 25 | 61 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S003 | N | 3 Mar 2015 | 2 - 4 | SW8270C-SIM | PAH | Chrysene | 9.4 J | 6.3 | 13 | | µg/kg | | NC |
| SO | BVBS1294 | BVBS1294S003 | N | 3 Mar 2015 | 2 - 4 | SW8270C-SIM | PAH | Fluoranthene | **59 J** | 6.3 | 13 | 5.2 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S003 | N | 3 Mar 2015 | 2 - 4 | SW8270C-SIM | PAH | Indeno(1,2,3-cd)pyrene | 15 = | 6.3 | 13 | | µg/kg | | NC |
| SO | BVBS1294 | BVBS1294S003 | N | 3 Mar 2015 | 2 - 4 | SW8270C-SIM | PAH | PAHTEQM | **14.694 =** | | | 4.47 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S003 | N | 3 Mar 2015 | 2 - 4 | SW8270C-SIM | PAH | Phenanthrene | **8.2 J** | 6.3 | 13 | 3.9 | µg/kg | X | Y |

TABLE 9-3
**Detected Analytical Data 2015 Biovent Soil Sampling**
*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (feet) | Method | Class | Analyte | Final Result | MDL | RL | SL | Units | Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1294 | BVBS1294S003 | N | 3 Mar 2015 | 2 - 4 | SW8270C-SIM | PAH | Pyrene | **73 J** | 6.3 | 13 | 5.6 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S003 | N | 3 Mar 2015 | 2 - 4 | SW9045D | GENCHEM | pH | 6.01 = | | | | pH units | | NC |
| SO | BVBS1294 | BVBS1294S004 | N | 3 Mar 2015 | 6 - 7 | SW8015B | HC | Diesel Range Organics (C12-C14) | **5900000 =** | 59000 | 120000 | 5000 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S004 | N | 3 Mar 2015 | 6 - 7 | SW8015B | HC | Diesel Range Organics (C15-C20) | **3100000 =** | 59000 | 120000 | 5000 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S004 | N | 3 Mar 2015 | 6 - 7 | SW8015B | HC | Diesel Range Organics (C8-C11) | **1700000 =** | 59000 | 120000 | 1000 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S004 | N | 3 Mar 2015 | 6 - 7 | SW8015B | HC | GRO (C4-C12) | **1200000 =** | 10000 | 20000 | 1000 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S004 | N | 3 Mar 2015 | 6 - 7 | SW8015B | HC | Total EFH(C8-C40) | **11000000=** | 59000 | 120000 | 10000 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S004 | N | 3 Mar 2015 | 6 - 7 | SW8260B | VOC | 1,2,4-Trimethylbenzene | 4.5 J | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S004 | N | 3 Mar 2015 | 6 - 7 | SW8260B | VOC | 1,3,5-Trimethylbenzene | 2.6 J | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S004 | N | 3 Mar 2015 | 6 - 7 | SW8260B | VOC | Acetone | 16 J | 4.9 | 20 | 20 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S004 | N | 3 Mar 2015 | 6 - 7 | SW8260B | VOC | Ethylbenzene | **7.9 J** | 0.98 | 4.9 | 5 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S004 | N | 3 Mar 2015 | 6 - 7 | SW8260B | VOC | Isopropylbenzene | **9.4 J** | 0.98 | 4.9 | 5 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S004 | N | 3 Mar 2015 | 6 - 7 | SW8260B | VOC | m,p-Xylenes | 2.6 J | 2 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S004 | N | 3 Mar 2015 | 6 - 7 | SW8260B | VOC | n-Propylbenzene | **17 J** | 0.98 | 4.9 | 5 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S004 | N | 3 Mar 2015 | 6 - 7 | SW8260B | VOC | o-Xylene | **5.6 J** | 0.98 | 4.9 | 5 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S004 | N | 3 Mar 2015 | 6 - 7 | SW8260B | VOC | p-Isopropyltoluene | 4 J | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S004 | N | 3 Mar 2015 | 6 - 7 | SW8260B | VOC | sec-Butylbenzene | **23 J** | 0.98 | 4.9 | 5 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S004 | N | 3 Mar 2015 | 6 - 7 | SW8260B | VOC | tert-Butylbenzene | 2.2 J | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S004 | N | 3 Mar 2015 | 6 - 7 | SW8270C-SIM | PAH | Anthracene | **46 J** | 5.9 | 12 | 2.5 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S004 | N | 3 Mar 2015 | 6 - 7 | SW8270C-SIM | PAH | Benzo(a)anthracene | 48 J | 5.9 | 12 | | µg/kg | | NC |
| SO | BVBS1294 | BVBS1294S004 | N | 3 Mar 2015 | 6 - 7 | SW8270C-SIM | PAH | Benzo(a)pyrene | 50 J | 5.9 | 12 | | µg/kg | | NC |
| SO | BVBS1294 | BVBS1294S004 | N | 3 Mar 2015 | 6 - 7 | SW8270C-SIM | PAH | Benzo(b)fluoranthene | 49 J | 5.9 | 12 | | µg/kg | | NC |
| SO | BVBS1294 | BVBS1294S004 | N | 3 Mar 2015 | 6 - 7 | SW8270C-SIM | PAH | Benzo(ghi)perylene | **80 J** | 5.9 | 12 | 2.5 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S004 | N | 3 Mar 2015 | 6 - 7 | SW8270C-SIM | PAH | Benzo(k)fluoranthene | 12 J | 5.9 | 12 | | µg/kg | | NC |
| SO | BVBS1294 | BVBS1294S004 | N | 3 Mar 2015 | 6 - 7 | SW8270C-SIM | PHTH | Bis(2-ethylhexyl)phthalate | **1000 J** | 12 | 24 | 61 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S004 | N | 3 Mar 2015 | 6 - 7 | SW8270C-SIM | PAH | Chrysene | 33 J | 5.9 | 12 | | µg/kg | | NC |
| SO | BVBS1294 | BVBS1294S004 | N | 3 Mar 2015 | 6 - 7 | SW8270C-SIM | PHTH | Di-n-octyl phthalate | **46 J** | 12 | 24 | 27 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S004 | N | 3 Mar 2015 | 6 - 7 | SW8270C-SIM | PAH | Fluoranthene | **210 J** | 5.9 | 12 | 5.2 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S004 | N | 3 Mar 2015 | 6 - 7 | SW8270C-SIM | PAH | Fluorene | **87 J** | 5.9 | 12 | 3.8 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S004 | N | 3 Mar 2015 | 6 - 7 | SW8270C-SIM | PAH | Indeno(1,2,3-cd)pyrene | 39 J | 5.9 | 12 | | µg/kg | | NC |
| SO | BVBS1294 | BVBS1294S004 | N | 3 Mar 2015 | 6 - 7 | SW8270C-SIM | PAH | PAHTEQM | **65.13 =** | | | 4.47 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S004 | N | 3 Mar 2015 | 6 - 7 | SW8270C-SIM | PAH | Phenanthrene | **71 J** | 5.9 | 12 | 3.9 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S004 | N | 3 Mar 2015 | 6 - 7 | SW8270C-SIM | PAH | Pyrene | **280 J** | 5.9 | 12 | 5.6 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S004 | N | 3 Mar 2015 | 6 - 7 | SW9045D | GENCHEM | pH | 7.27 = | | | | pH units | | NC |
| SO | BVBS1294 | BVBS1294S005 | N | 10 Apr 2015 | 2 - 4 | M8015D | HC | Diesel Range Organics (C12-C14) | **13000 J** | 2800 | 5600 | 5000 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S005 | N | 10 Apr 2015 | 2 - 4 | M8015D | HC | Diesel Range Organics (C15-C20) | **83000 J** | 2800 | 5600 | 5000 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S005 | N | 10 Apr 2015 | 2 - 4 | M8015D | HC | Diesel Range Organics (C21-C30) | **23000 J** | 2800 | 5600 | 5000 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S005 | N | 10 Apr 2015 | 2 - 4 | M8015D | HC | TOTAL EFH(C8-C40) | **130000 J** | 2800 | 5600 | 10000 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S005 | N | 10 Apr 2015 | 2 - 4 | SW8015B | HC | GRO (C4-C12) | 1000 J | 560 | 1100 | 1000 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S005 | N | 10 Apr 2015 | 2 - 4 | SW9045D | GENCHEM | pH | 6.11 = | | | | pH units | | NC |
| SO | BVBS1294 | BVBS1294S006 | N | 10 Apr 2015 | 6 - 7 | M8015D | HC | Diesel Range Organics (C12-C14) | **3500000 =** | 31000 | 62000 | 5000 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S006 | N | 10 Apr 2015 | 6 - 7 | M8015D | HC | Diesel Range Organics (C15-C20) | **2000000 =** | 31000 | 62000 | 5000 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S006 | N | 10 Apr 2015 | 6 - 7 | M8015D | HC | Diesel Range Organics (C21-C30) | **51000 J** | 31000 | 62000 | 5000 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S006 | N | 10 Apr 2015 | 6 - 7 | M8015D | HC | Diesel Range Organics (C8-C11) | **780000 =** | 31000 | 62000 | 1000 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S006 | N | 10 Apr 2015 | 6 - 7 | M8015D | HC | TOTAL EFH(C8-C40) | **6300000 =** | 31000 | 62000 | 10000 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S006 | N | 10 Apr 2015 | 6 - 7 | SW8015B | HC | GRO (C4-C12) | **2000000 =** | 28000 | 56000 | 1000 | µg/kg | X | Y |

TABLE 9-3
**Detected Analytical Data 2015 Biovent Soil Sampling**
*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (feet) | Method | Class | Analyte | Final Result | MDL | RL | SL | Units | Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1294 | BVBS1294S006 | N | 10 Apr 2015 | 6 - 7 | SW8260B | VOC | 1,2,4-Trimethylbenzene | 3.2 J | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S006 | N | 10 Apr 2015 | 6 - 7 | SW8260B | VOC | 1,3,5-Trimethylbenzene | 1.4 J | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S006 | N | 10 Apr 2015 | 6 - 7 | SW8260B | VOC | Acetone | **23 J** | 5.1 | 20 | 20 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S006 | N | 10 Apr 2015 | 6 - 7 | SW8260B | VOC | Ethylbenzene | **15 J** | 1 | 5.1 | 5 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S006 | N | 10 Apr 2015 | 6 - 7 | SW8260B | VOC | Isopropylbenzene | **10 J** | 1 | 5.1 | 5 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S006 | N | 10 Apr 2015 | 6 - 7 | SW8260B | VOC | m,p-Xylenes | 4.3 J | 2 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S006 | N | 10 Apr 2015 | 6 - 7 | SW8260B | VOC | n-Propylbenzene | **19 J** | 1 | 5.1 | 5 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S006 | N | 10 Apr 2015 | 6 - 7 | SW8260B | VOC | o-Xylene | **8.8 J** | 1 | 5.1 | 5 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S006 | N | 10 Apr 2015 | 6 - 7 | SW8260B | VOC | p-Isopropyltoluene | 3.2 J | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S006 | N | 10 Apr 2015 | 6 - 7 | SW8260B | VOC | sec-Butylbenzene | **23 J** | 1 | 5.1 | 5 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S006 | N | 10 Apr 2015 | 6 - 7 | SW8260B | VOC | tert-Butylbenzene | 2.2 J | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S006 | N | 10 Apr 2015 | 6 - 7 | SW8260B | VOC | Toluene | 1.8 J | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S006 | N | 10 Apr 2015 | 6 - 7 | SW8270C-SIM | PAH | 1-Methylnaphthalene | **13 =** | 6.2 | 12 | 2.5 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S006 | N | 10 Apr 2015 | 6 - 7 | SW8270C-SIM | PAH | 2-Methylnaphthalene | **16 =** | 6.2 | 12 | 2.5 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S006 | N | 10 Apr 2015 | 6 - 7 | SW8270C-SIM | PAH | Naphthalene | **13 =** | 6.2 | 12 | 3.6 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S006 | N | 10 Apr 2015 | 6 - 7 | SW8270C-SIM | PAH | Phenanthrene | **7.2 J** | 6.2 | 12 | 3.9 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S006 | N | 10 Apr 2015 | 6 - 7 | SW9045D | GENCHEM | pH | 8 = | | | | pH units | | NC |
| SO | BVBS1295 | BVBS1295D001 | FD | 4 Feb 2015 | 2.5 - 4 | SW8015B | HC | Diesel Range Organics (C21-C30) | 3700 J | 3100 | 6200 | 5000 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295D001 | FD | 4 Feb 2015 | 2.5 - 4 | SW8015B | HC | Total EFH(C8-C40) | 9300 = | 3100 | 6200 | 10000 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295D001 | FD | 4 Feb 2015 | 2.5 - 4 | Walkley-Black | GENCHEM | Total Organic Carbon | 1960 = | 719 | 719 | | mg/kg | | NC |
| SO | BVBS1295 | BVBS1295S001 | N | 4 Feb 2015 | 2.5 - 4 | SW8015B | HC | Diesel Range Organics (C15-C20) | 3500 J | 2800 | 5600 | 5000 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S001 | N | 4 Feb 2015 | 2.5 - 4 | SW8015B | HC | Diesel Range Organics (C21-C30) | **8400 =** | 2800 | 5600 | 5000 | µg/kg | X | Y |
| SO | BVBS1295 | BVBS1295S001 | N | 4 Feb 2015 | 2.5 - 4 | SW8015B | HC | Total EFH(C8-C40) | **16000 =** | 2800 | 5600 | 10000 | µg/kg | X | Y |
| SO | BVBS1295 | BVBS1295S001 | N | 4 Feb 2015 | 2.5 - 4 | SW8260B | VOC | Methylene chloride | 2.1 J | 2.1 | 10 | 10 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S001 | N | 4 Feb 2015 | 2.5 - 4 | Walkley-Black | GENCHEM | Total Organic Carbon | 2190 = | 649 | 649 | | mg/kg | | NC |
| SO | BVBS1295 | BVBS1295S002 | N | 4 Feb 2015 | 5.5 - 7 | SW8015B | HC | Diesel Range Organics (C12-C14) | **8000000 =** | 31000 | 63000 | 5000 | µg/kg | X | Y |
| SO | BVBS1295 | BVBS1295S002 | N | 4 Feb 2015 | 5.5 - 7 | SW8015B | HC | Diesel Range Organics (C15-C20) | **4500000 =** | 31000 | 63000 | 5000 | µg/kg | X | Y |
| SO | BVBS1295 | BVBS1295S002 | N | 4 Feb 2015 | 5.5 - 7 | SW8015B | HC | Diesel Range Organics (C21-C30) | **160000 =** | 31000 | 63000 | 5000 | µg/kg | X | Y |
| SO | BVBS1295 | BVBS1295S002 | N | 4 Feb 2015 | 5.5 - 7 | SW8015B | HC | Diesel Range Organics (C8-C11) | **2500000 =** | 31000 | 63000 | 1000 | µg/kg | X | Y |
| SO | BVBS1295 | BVBS1295S002 | N | 4 Feb 2015 | 5.5 - 7 | SW8015B | HC | GRO (C4-C12) | **1100000 =** | 21000 | 41000 | 1000 | µg/kg | X | Y |
| SO | BVBS1295 | BVBS1295S002 | N | 4 Feb 2015 | 5.5 - 7 | SW8015B | HC | TOTAL EFH(C8-C40) | **15000000=** | 31000 | 63000 | 10000 | µg/kg | X | Y |
| SO | BVBS1295 | BVBS1295S002 | N | 4 Feb 2015 | 5.5 - 7 | SW8260B | VOC | 1,2,4-Trimethylbenzene | **5.3 J** | 1 | 5.1 | 5 | µg/kg | X | Y |
| SO | BVBS1295 | BVBS1295S002 | N | 4 Feb 2015 | 5.5 - 7 | SW8260B | VOC | Acetone | 14 J | 5.1 | 20 | 20 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S002 | N | 4 Feb 2015 | 5.5 - 7 | SW8260B | VOC | Bromodichloromethane | 2.4 J | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S002 | N | 4 Feb 2015 | 5.5 - 7 | SW8260B | VOC | Ethylbenzene | 4.4 J | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S002 | N | 4 Feb 2015 | 5.5 - 7 | SW8260B | VOC | n-butylbenzene | **9 J** | 1 | 5.1 | 5 | µg/kg | X | Y |
| SO | BVBS1295 | BVBS1295S002 | N | 4 Feb 2015 | 5.5 - 7 | SW8260B | VOC | n-Propylbenzene | **8 J** | 1 | 5.1 | 5 | µg/kg | X | Y |
| SO | BVBS1295 | BVBS1295S002 | N | 4 Feb 2015 | 5.5 - 7 | SW8260B | VOC | o-Xylene | 2.1 J | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S002 | N | 4 Feb 2015 | 5.5 - 7 | SW8260B | VOC | sec-Butylbenzene | **17 J** | 1 | 5.1 | 5 | µg/kg | X | Y |
| SO | BVBS1295 | BVBS1295S002 | N | 4 Feb 2015 | 5.5 - 7 | SW8260B | VOC | tert-Butylbenzene | 1.7 J | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S002 | N | 4 Feb 2015 | 5.5 - 7 | SW8260B | VOC | Trichloroethene | 2.1 J | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S002 | N | 4 Feb 2015 | 5.5 - 7 | SW8270C-SIM | PAH | Acenaphthene | **11 J** | 6.3 | 13 | 2.5 | µg/kg | X | Y |
| SO | BVBS1295 | BVBS1295S002 | N | 4 Feb 2015 | 5.5 - 7 | SW8270C-SIM | PHTH | Bis(2-ethylhexyl)phthalate | **180 =** | 13 | 25 | 61 | µg/kg | X | Y |
| SO | BVBS1295 | BVBS1295S002 | N | 4 Feb 2015 | 5.5 - 7 | SW8270C-SIM | PAH | Fluoranthene | **26 =** | 6.3 | 13 | 5.2 | µg/kg | X | Y |
| SO | BVBS1295 | BVBS1295S002 | N | 4 Feb 2015 | 5.5 - 7 | SW8270C-SIM | PAH | Pyrene | **32 =** | 6.3 | 13 | 5.6 | µg/kg | X | Y |
| SO | BVBS1295 | BVBS1295S002 | N | 4 Feb 2015 | 5.5 - 7 | Walkley-Black | GENCHEM | Total Organic Carbon | 18800 = | 2980 | 2980 | | mg/kg | | NC |

TABLE 9-3
**Detected Analytical Data 2015 Biovent Soil Sampling**
*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (feet) | Method | Class | Analyte | Final Result | MDL | RL | SL | Units | Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1295 | BVBS1295S003 | N | 3 Mar 2015 | 2.5 - 4.5 | SW8015B | HC | Diesel Range Organics (C15-C20) | **9600 =** | 2900 | 5800 | 5000 | µg/kg | X | Y |
| SO | BVBS1295 | BVBS1295S003 | N | 3 Mar 2015 | 2.5 - 4.5 | SW8015B | HC | TOTAL EFH(C8-C40) | **13000 =** | 2900 | 5800 | 10000 | µg/kg | X | Y |
| SO | BVBS1295 | BVBS1295S003 | N | 3 Mar 2015 | 2.5 - 4.5 | SW9045D | GENCHEM | pH | 7.39 = | | | | pH units | | NC |
| SO | BVBS1295 | BVBS1295S003SP | FS | 3 Mar 2015 | 2.5 - 4.5 | SW8260B | VOC | Acetone | 6.8 J | 6 | 19 | 20 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S003SP | FS | 3 Mar 2015 | 2.5 - 4.5 | SW8270C-SIM | PHTH | Bis(2-ethylhexyl)phthalate | 10 J | 4.4 | 11 | 61 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S003SP | FS | 3 Mar 2015 | 2.5 - 4.5 | SW8270C-SIM | PHTH | Butyl benzyl phthalate | 7.1 J | 4.8 | 11 | 100 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S003SP | FS | 3 Mar 2015 | 2.5 - 4.5 | SW8270C-SIM | PHTH | Dimethyl phthalate | **340 =** | 5.8 | 11 | 27 | µg/kg | X | Y |
| SO | BVBS1295 | BVBS1295S003SP | FS | 3 Mar 2015 | 2.5 - 4.5 | SW8270C-SIM | PHTH | Di-n-butyl phthalate | 9.8 J | 5.6 | 11 | 27 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S003SP | FS | 3 Mar 2015 | 2.5 - 4.5 | SW9045D | GENCHEM | pH | 7.32 = | | | | pH units | | NC |
| SO | BVBS1295 | BVBS1295S004 | N | 3 Mar 2015 | 5.5 - 8 | SW8015B | HC | Diesel Range Organics (C12-C14) | **8000 =** | 2800 | 5500 | 5000 | µg/kg | X | Y |
| SO | BVBS1295 | BVBS1295S004 | N | 3 Mar 2015 | 5.5 - 8 | SW8015B | HC | Diesel Range Organics (C15-C20) | **40000 =** | 2800 | 5500 | 5000 | µg/kg | X | Y |
| SO | BVBS1295 | BVBS1295S004 | N | 3 Mar 2015 | 5.5 - 8 | SW8015B | HC | GRO (C4-C12) | **6400 =** | 460 | 930 | 1000 | µg/kg | X | Y |
| SO | BVBS1295 | BVBS1295S004 | N | 3 Mar 2015 | 5.5 - 8 | SW8015B | HC | TOTAL EFH(C8-C40) | **50000 =** | 2800 | 5500 | 10000 | µg/kg | X | Y |
| SO | BVBS1295 | BVBS1295S004 | N | 3 Mar 2015 | 5.5 - 8 | SW8270C-SIM | PAH | Benzo(a)anthracene | 16 = | 5.5 | 11 | | µg/kg | | NC |
| SO | BVBS1295 | BVBS1295S004 | N | 3 Mar 2015 | 5.5 - 8 | SW8270C-SIM | PAH | Benzo(a)pyrene | 8.1 J | 5.5 | 11 | | µg/kg | | NC |
| SO | BVBS1295 | BVBS1295S004 | N | 3 Mar 2015 | 5.5 - 8 | SW8270C-SIM | PAH | Benzo(b)fluoranthene | 10 J | 5.5 | 11 | | µg/kg | | NC |
| SO | BVBS1295 | BVBS1295S004 | N | 3 Mar 2015 | 5.5 - 8 | SW8270C-SIM | PAH | Benzo(ghi)perylene | **9.3 J** | 5.5 | 11 | 2.5 | µg/kg | X | Y |
| SO | BVBS1295 | BVBS1295S004 | N | 3 Mar 2015 | 5.5 - 8 | SW8270C-SIM | PHTH | Bis(2-ethylhexyl)phthalate | **820 =** | 11 | 22 | 61 | µg/kg | X | Y |
| SO | BVBS1295 | BVBS1295S004 | N | 3 Mar 2015 | 5.5 - 8 | SW8270C-SIM | PAH | Fluoranthene | **68 J** | 5.5 | 11 | 5.2 | µg/kg | X | Y |
| SO | BVBS1295 | BVBS1295S004 | N | 3 Mar 2015 | 5.5 - 8 | SW8270C-SIM | PAH | PAHTEQM | **10.7 =** | | | 4.47 | µg/kg | X | Y |
| SO | BVBS1295 | BVBS1295S004 | N | 3 Mar 2015 | 5.5 - 8 | SW8270C-SIM | PAH | Pyrene | **120 J** | 5.5 | 11 | 5.6 | µg/kg | X | Y |
| SO | BVBS1295 | BVBS1295S004 | N | 3 Mar 2015 | 5.5 - 8 | SW9045D | GENCHEM | pH | 7.77 = | | | | pH units | | NC |
| SO | BVBS1295 | BVBS1295S005 | N | 10 Apr 2015 | 2.5 - 4 | M8015D | HC | Diesel Range Organics (C12-C14) | **51000 =** | 2500 | 5000 | 5000 | µg/kg | X | Y |
| SO | BVBS1295 | BVBS1295S005 | N | 10 Apr 2015 | 2.5 - 4 | M8015D | HC | Diesel Range Organics (C15-C20) | **71000 =** | 2500 | 5000 | 5000 | µg/kg | X | Y |
| SO | BVBS1295 | BVBS1295S005 | N | 10 Apr 2015 | 2.5 - 4 | M8015D | HC | Diesel Range Organics (C21-C30) | **15000 =** | 2500 | 5000 | 5000 | µg/kg | X | Y |
| SO | BVBS1295 | BVBS1295S005 | N | 10 Apr 2015 | 2.5 - 4 | M8015D | HC | TOTAL EFH(C8-C40) | **150000 =** | 2500 | 5000 | 10000 | µg/kg | X | Y |
| SO | BVBS1295 | BVBS1295S005 | N | 10 Apr 2015 | 2.5 - 4 | SW8015B | HC | GRO (C4-C12) | **37000 =** | 500 | 990 | 1000 | µg/kg | X | Y |
| SO | BVBS1295 | BVBS1295S005 | N | 10 Apr 2015 | 2.5 - 4 | SW8260B | VOC | 1,1,1-Trichloroethane | **9.6 =** | 0.93 | 4.7 | 5 | µg/kg | X | Y |
| SO | BVBS1295 | BVBS1295S005 | N | 10 Apr 2015 | 2.5 - 4 | SW8260B | VOC | 1,1-Dichloroethane | 2 J | 0.93 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S005 | N | 10 Apr 2015 | 2.5 - 4 | SW8260B | VOC | Acetone | **23 =** | 4.7 | 19 | 20 | µg/kg | X | Y |
| SO | BVBS1295 | BVBS1295S005 | N | 10 Apr 2015 | 2.5 - 4 | SW8260B | VOC | Methylene chloride | 3.1 J | 1.9 | 9.3 | 10 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S005 | N | 10 Apr 2015 | 2.5 - 4 | SW8260B | VOC | Toluene | 1.1 J | 0.93 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S005 | N | 10 Apr 2015 | 2.5 - 4 | SW8270C-SIM | PAH | Anthracene | **6.9 J** | 5 | 10 | 2.5 | µg/kg | X | Y |
| SO | BVBS1295 | BVBS1295S005 | N | 10 Apr 2015 | 2.5 - 4 | SW8270C-SIM | PAH | Benzo(a)anthracene | 9.3 J | 5 | 10 | | µg/kg | | NC |
| SO | BVBS1295 | BVBS1295S005 | N | 10 Apr 2015 | 2.5 - 4 | SW8270C-SIM | PAH | Benzo(a)pyrene | 9.2 J | 5 | 10 | | µg/kg | | NC |
| SO | BVBS1295 | BVBS1295S005 | N | 10 Apr 2015 | 2.5 - 4 | SW8270C-SIM | PAH | Benzo(b)fluoranthene | 15 = | 5 | 10 | | µg/kg | | NC |
| SO | BVBS1295 | BVBS1295S005 | N | 10 Apr 2015 | 2.5 - 4 | SW8270C-SIM | PAH | Benzo(ghi)perylene | **22 =** | 5 | 10 | 2.5 | µg/kg | X | Y |
| SO | BVBS1295 | BVBS1295S005 | N | 10 Apr 2015 | 2.5 - 4 | SW8270C-SIM | PAH | Benzo(k)fluoranthene | 5.2 J | 5 | 10 | | µg/kg | | NC |
| SO | BVBS1295 | BVBS1295S005 | N | 10 Apr 2015 | 2.5 - 4 | SW8270C-SIM | PHTH | Bis(2-ethylhexyl)phthalate | **450 =** | 10 | 20 | 61 | µg/kg | X | Y |
| SO | BVBS1295 | BVBS1295S005 | N | 10 Apr 2015 | 2.5 - 4 | SW8270C-SIM | PAH | Chrysene | 9.2 J | 5 | 10 | | µg/kg | | NC |
| SO | BVBS1295 | BVBS1295S005 | N | 10 Apr 2015 | 2.5 - 4 | SW8270C-SIM | PAH | Fluoranthene | **44 =** | 5 | 10 | 5.2 | µg/kg | X | Y |
| SO | BVBS1295 | BVBS1295S005 | N | 10 Apr 2015 | 2.5 - 4 | SW8270C-SIM | PAH | Indeno(1,2,3-cd)pyrene | 12 = | 5 | 10 | | µg/kg | | NC |
| SO | BVBS1295 | BVBS1295S005 | N | 10 Apr 2015 | 2.5 - 4 | SW8270C-SIM | PAH | Naphthalene | **12 =** | 5 | 10 | 3.6 | µg/kg | X | Y |
| SO | BVBS1295 | BVBS1295S005 | N | 10 Apr 2015 | 2.5 - 4 | SW8270C-SIM | PAH | PAHTEQM | **13.442 =** | | | 4.47 | µg/kg | X | Y |
| SO | BVBS1295 | BVBS1295S005 | N | 10 Apr 2015 | 2.5 - 4 | SW8270C-SIM | PAH | Phenanthrene | **24 =** | 5 | 10 | 3.9 | µg/kg | X | Y |
| SO | BVBS1295 | BVBS1295S005 | N | 10 Apr 2015 | 2.5 - 4 | SW8270C-SIM | PAH | Pyrene | **69 =** | 5 | 10 | 5.6 | µg/kg | X | Y |

TABLE 9-3
**Detected Analytical Data 2015 Biovent Soil Sampling**
*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (feet) | Method | Class | Analyte | Final Result | MDL | RL | SL | Units | Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1295 | BVBS1295S005 | N | 10 Apr 2015 | 2.5 - 4 | SW9045D | GENCHEM | pH | 6.76 = | | | | pH units | | NC |
| SO | BVBS1295 | BVBS1295S005SP | FS | 10 Apr 2015 | 2.5 - 4 | SW8015B | HC | Diesel Range Organics (C12-C14) | **270000 J** | 1300 | 5200 | 5000 | µg/kg | X | Y |
| SO | BVBS1295 | BVBS1295S005SP | FS | 10 Apr 2015 | 2.5 - 4 | SW8015B | HC | Diesel Range Organics (C15-C20) | **95000 J** | 1300 | 5200 | 5000 | µg/kg | X | Y |
| SO | BVBS1295 | BVBS1295S005SP | FS | 10 Apr 2015 | 2.5 - 4 | SW8015B | HC | Diesel Range Organics (C21-C30) | **15000 J** | 1300 | 5200 | 5000 | µg/kg | X | Y |
| SO | BVBS1295 | BVBS1295S005SP | FS | 10 Apr 2015 | 2.5 - 4 | SW8015B | HC | Diesel Range Organics (C8-C11) | **40000 J** | 1300 | 5200 | 1000 | µg/kg | X | Y |
| SO | BVBS1295 | BVBS1295S005SP | FS | 10 Apr 2015 | 2.5 - 4 | SW8015B | HC | GRO (C4-C12) | **540000 =** | 5300 | 21000 | 1000 | µg/kg | X | Y |
| SO | BVBS1295 | BVBS1295S005SP | FS | 10 Apr 2015 | 2.5 - 4 | SW8015B | HC | ORO (C31-C40) | 2800 J | 1300 | 5200 | 10000 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S005SP | FS | 10 Apr 2015 | 2.5 - 4 | SW8260B | VOC | Acetone | 15 J | 6.3 | 20 | 20 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S005SP | FS | 10 Apr 2015 | 2.5 - 4 | SW8270C-SIM | PAH | Acenaphthene | **7.6 J** | 4.9 | 11 | 2.5 | µg/kg | X | Y |
| SO | BVBS1295 | BVBS1295S005SP | FS | 10 Apr 2015 | 2.5 - 4 | SW8270C-SIM | PAH | Anthracene | **10 J** | 5.3 | 11 | 2.5 | µg/kg | X | Y |
| SO | BVBS1295 | BVBS1295S005SP | FS | 10 Apr 2015 | 2.5 - 4 | SW8270C-SIM | PAH | Benzo(a)anthracene | 16 J | 4.7 | 11 | | µg/kg | | NC |
| SO | BVBS1295 | BVBS1295S005SP | FS | 10 Apr 2015 | 2.5 - 4 | SW8270C-SIM | PAH | Benzo(a)pyrene | 17 = | 5 | 11 | | µg/kg | | NC |
| SO | BVBS1295 | BVBS1295S005SP | FS | 10 Apr 2015 | 2.5 - 4 | SW8270C-SIM | PAH | Benzo(b)fluoranthene | 16 J | 5.2 | 11 | | µg/kg | | NC |
| SO | BVBS1295 | BVBS1295S005SP | FS | 10 Apr 2015 | 2.5 - 4 | SW8270C-SIM | PAH | Benzo(ghi)perylene | **43 =** | 5.1 | 11 | 2.5 | µg/kg | X | Y |
| SO | BVBS1295 | BVBS1295S005SP | FS | 10 Apr 2015 | 2.5 - 4 | SW8270C-SIM | PAH | Benzo(k)fluoranthene | 22 J | 5.1 | 11 | | µg/kg | | NC |
| SO | BVBS1295 | BVBS1295S005SP | FS | 10 Apr 2015 | 2.5 - 4 | SW8270C-SIM | PHTH | Bis(2-ethylhexyl)phthalate | **580 J** | 5.7 | 11 | 61 | µg/kg | X | Y |
| SO | BVBS1295 | BVBS1295S005SP | FS | 10 Apr 2015 | 2.5 - 4 | SW8270C-SIM | PAH | Chrysene | 21 = | 4.4 | 11 | | µg/kg | | NC |
| SO | BVBS1295 | BVBS1295S005SP | FS | 10 Apr 2015 | 2.5 - 4 | SW8270C-SIM | PHTH | Diethyl phthalate | 8.2 J | 5.8 | 11 | 27 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S005SP | FS | 10 Apr 2015 | 2.5 - 4 | SW8270C-SIM | PHTH | Dimethyl phthalate | **42 J** | 4 | 11 | 27 | µg/kg | X | Y |
| SO | BVBS1295 | BVBS1295S005SP | FS | 10 Apr 2015 | 2.5 - 4 | SW8270C-SIM | PAH | Fluoranthene | **87 J** | 5.2 | 11 | 5.2 | µg/kg | X | Y |
| SO | BVBS1295 | BVBS1295S005SP | FS | 10 Apr 2015 | 2.5 - 4 | SW8270C-SIM | PAH | Fluorene | **7.1 J** | 5.2 | 11 | 3.8 | µg/kg | X | Y |
| SO | BVBS1295 | BVBS1295S005SP | FS | 10 Apr 2015 | 2.5 - 4 | SW8270C-SIM | PAH | Indeno(1,2,3-cd)pyrene | 28 J | 6.6 | 11 | | µg/kg | | NC |
| SO | BVBS1295 | BVBS1295S005SP | FS | 10 Apr 2015 | 2.5 - 4 | SW8270C-SIM | PAH | PAHTEQM | **25.41 =** | | | 4.47 | µg/kg | X | Y |
| SO | BVBS1295 | BVBS1295S005SP | FS | 10 Apr 2015 | 2.5 - 4 | SW8270C-SIM | PAH | Phenanthrene | **26 J** | 5.2 | 11 | 3.9 | µg/kg | X | Y |
| SO | BVBS1295 | BVBS1295S005SP | FS | 10 Apr 2015 | 2.5 - 4 | SW8270C-SIM | PAH | Pyrene | **130 J** | 4.5 | 11 | 5.6 | µg/kg | X | Y |
| SO | BVBS1295 | BVBS1295S005SP | FS | 10 Apr 2015 | 2.5 - 4 | SW9045D | GENCHEM | pH | 6.41 = | | | | pH units | | NC |
| SO | BVBS1295 | BVBS1295S006 | N | 10 Apr 2015 | 5.5 - 8 | M8015D | HC | Diesel Range Organics (C15-C20) | **14000 J** | 2700 | 5300 | 5000 | µg/kg | X | Y |
| SO | BVBS1295 | BVBS1295S006 | N | 10 Apr 2015 | 5.5 - 8 | SW8015B | HC | GRO (C4-C12) | **7900 =** | 460 | 920 | 1000 | µg/kg | X | Y |
| SO | BVBS1295 | BVBS1295S006 | N | 10 Apr 2015 | 5.5 - 8 | SW9045D | GENCHEM | pH | 7.78 = | | | | pH units | | NC |
| SO | BVBS1296 | BVBS1296S001 | N | 4 Feb 2015 | 3 - 4 | SW8015B | HC | Diesel Range Organics (C12-C14) | **70000 =** | 3300 | 6700 | 5000 | µg/kg | X | Y |
| SO | BVBS1296 | BVBS1296S001 | N | 4 Feb 2015 | 3 - 4 | SW8015B | HC | Diesel Range Organics (C15-C20) | **130000 =** | 3300 | 6700 | 5000 | µg/kg | X | Y |
| SO | BVBS1296 | BVBS1296S001 | N | 4 Feb 2015 | 3 - 4 | SW8015B | HC | Diesel Range Organics (C21-C30) | **16000 =** | 3300 | 6700 | 5000 | µg/kg | X | Y |
| SO | BVBS1296 | BVBS1296S001 | N | 4 Feb 2015 | 3 - 4 | SW8015B | HC | GRO (C4-C12) | **25000 J** | 610 | 1200 | 1000 | µg/kg | X | Y |
| SO | BVBS1296 | BVBS1296S001 | N | 4 Feb 2015 | 3 - 4 | SW8015B | HC | TOTAL EFH(C8-C40) | **220000 =** | 3300 | 6700 | 10000 | µg/kg | X | Y |
| SO | BVBS1296 | BVBS1296S001 | N | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | Methylene chloride | 2.7 J | 2.6 | 13 | 10 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S001 | N | 4 Feb 2015 | 3 - 4 | SW8270C-SIM | PAH | Benzo(a)pyrene | 10 J | 6.7 | 13 | | µg/kg | | NC |
| SO | BVBS1296 | BVBS1296S001 | N | 4 Feb 2015 | 3 - 4 | SW8270C-SIM | PAH | Benzo(b)fluoranthene | 30 = | 6.7 | 13 | | µg/kg | | NC |
| SO | BVBS1296 | BVBS1296S001 | N | 4 Feb 2015 | 3 - 4 | SW8270C-SIM | PAH | Benzo(ghi)perylene | **33 =** | 6.7 | 13 | 2.5 | µg/kg | X | Y |
| SO | BVBS1296 | BVBS1296S001 | N | 4 Feb 2015 | 3 - 4 | SW8270C-SIM | PAH | Benzo(k)fluoranthene | 8 J | 6.7 | 13 | | µg/kg | | NC |
| SO | BVBS1296 | BVBS1296S001 | N | 4 Feb 2015 | 3 - 4 | SW8270C-SIM | PHTH | Bis(2-ethylhexyl)phthalate | **740 =** | 13 | 27 | 61 | µg/kg | X | Y |
| SO | BVBS1296 | BVBS1296S001 | N | 4 Feb 2015 | 3 - 4 | SW8270C-SIM | PAH | Fluoranthene | **30 =** | 6.7 | 13 | 5.2 | µg/kg | X | Y |
| SO | BVBS1296 | BVBS1296S001 | N | 4 Feb 2015 | 3 - 4 | SW8270C-SIM | PAH | Indeno(1,2,3-cd)pyrene | 24 = | 6.7 | 13 | | µg/kg | | NC |
| SO | BVBS1296 | BVBS1296S001 | N | 4 Feb 2015 | 3 - 4 | SW8270C-SIM | PAH | PAHTEQM | **16.2 =** | | | 4.47 | µg/kg | X | Y |
| SO | BVBS1296 | BVBS1296S001 | N | 4 Feb 2015 | 3 - 4 | SW8270C-SIM | PAH | Pyrene | **73 =** | 6.7 | 13 | 5.6 | µg/kg | X | Y |
| SO | BVBS1296 | BVBS1296S001 | N | 4 Feb 2015 | 3 - 4 | Walkley-Black | GENCHEM | Total Organic Carbon | 2880 = | 777 | 777 | | mg/kg | | NC |
| SO | BVBS1296 | BVBS1296S003 | N | 3 Mar 2015 | 3 - 4 | SW8015B | HC | Diesel Range Organics (C12-C14) | **99000 =** | 2800 | 5600 | 5000 | µg/kg | X | Y |

TABLE 9-3
**Detected Analytical Data 2015 Biovent Soil Sampling**
*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (feet) | Method | Class | Analyte | Final Result | MDL | RL | SL | Units | Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1296 | BVBS1296S003 | N | 3 Mar 2015 | 3 - 4 | SW8015B | HC | Diesel Range Organics (C15-C20) | **170000 =** | 2800 | 5600 | 5000 | µg/kg | X | Y |
| SO | BVBS1296 | BVBS1296S003 | N | 3 Mar 2015 | 3 - 4 | SW8015B | HC | Diesel Range Organics (C21-C30) | **11000 =** | 2800 | 5600 | 5000 | µg/kg | X | Y |
| SO | BVBS1296 | BVBS1296S003 | N | 3 Mar 2015 | 3 - 4 | SW8015B | HC | GRO (C4-C12) | **3500 =** | 510 | 1000 | 1000 | µg/kg | X | Y |
| SO | BVBS1296 | BVBS1296S003 | N | 3 Mar 2015 | 3 - 4 | SW8015B | HC | TOTAL EFH(C8-C40) | **280000 =** | 2800 | 5600 | 10000 | µg/kg | X | Y |
| SO | BVBS1296 | BVBS1296S003 | N | 3 Mar 2015 | 3 - 4 | SW8270C-SIM | PAH | Benzo(ghi)perylene | **12 =** | 5.6 | 11 | 2.5 | µg/kg | X | Y |
| SO | BVBS1296 | BVBS1296S003 | N | 3 Mar 2015 | 3 - 4 | SW8270C-SIM | PHTH | Bis(2-ethylhexyl)phthalate | 21 J | 11 | 23 | 61 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S003 | N | 3 Mar 2015 | 3 - 4 | SW8270C-SIM | PAH | Pyrene | **8.1 J** | 5.6 | 11 | 5.6 | µg/kg | X | Y |
| SO | BVBS1296 | BVBS1296S003 | N | 3 Mar 2015 | 3 - 4 | SW9045D | GENCHEM | pH | 5.44 = | | | | pH units | | NC |
| SO | BVBS1296 | BVBS1296S004 | N | 3 Mar 2015 | 7 - 8 | SW8015B | HC | Diesel Range Organics (C12-C14) | **6100 =** | 2700 | 5400 | 5000 | µg/kg | X | Y |
| SO | BVBS1296 | BVBS1296S004 | N | 3 Mar 2015 | 7 - 8 | SW8015B | HC | Diesel Range Organics (C15-C20) | **17000 =** | 2700 | 5400 | 5000 | µg/kg | X | Y |
| SO | BVBS1296 | BVBS1296S004 | N | 3 Mar 2015 | 7 - 8 | SW8015B | HC | GRO (C4-C12) | **5300 =** | 470 | 940 | 1000 | µg/kg | X | Y |
| SO | BVBS1296 | BVBS1296S004 | N | 3 Mar 2015 | 7 - 8 | SW8015B | HC | TOTAL EFH(C8-C40) | **25000 =** | 2700 | 5400 | 10000 | µg/kg | X | Y |
| SO | BVBS1296 | BVBS1296S004 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | Acetone | 8.3 J | 4.6 | 18 | 20 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S004 | N | 3 Mar 2015 | 7 - 8 | SW8270C-SIM | PHTH | Bis(2-ethylhexyl)phthalate | **280 =** | 11 | 21 | 61 | µg/kg | X | Y |
| SO | BVBS1296 | BVBS1296S004 | N | 3 Mar 2015 | 7 - 8 | SW8270C-SIM | PHTH | Di-n-octyl phthalate | 12 J | 11 | 21 | 27 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S004 | N | 3 Mar 2015 | 7 - 8 | SW9045D | GENCHEM | pH | 6.79 = | | | | pH units | | NC |
| SO | BVBS1296 | BVBS1296S005 | N | 10 Apr 2015 | 3 - 4 | M8015D | HC | Diesel Range Organics (C12-C14) | **220000 J** | 2900 | 5700 | 5000 | µg/kg | X | Y |
| SO | BVBS1296 | BVBS1296S005 | N | 10 Apr 2015 | 3 - 4 | M8015D | HC | Diesel Range Organics (C15-C20) | **390000 J** | 2900 | 5700 | 5000 | µg/kg | X | Y |
| SO | BVBS1296 | BVBS1296S005 | N | 10 Apr 2015 | 3 - 4 | M8015D | HC | Diesel Range Organics (C21-C30) | **35000 J** | 2900 | 5700 | 5000 | µg/kg | X | Y |
| SO | BVBS1296 | BVBS1296S005 | N | 10 Apr 2015 | 3 - 4 | M8015D | HC | TOTAL EFH(C8-C40) | **660000 J** | 2900 | 5700 | 10000 | µg/kg | X | Y |
| SO | BVBS1296 | BVBS1296S005 | N | 10 Apr 2015 | 3 - 4 | SW8015B | HC | GRO (C4-C12) | **70000 =** | 1000 | 2100 | 1000 | µg/kg | X | Y |
| SO | BVBS1296 | BVBS1296S005 | N | 10 Apr 2015 | 3 - 4 | SW8260B | VOC | Acetone | 11 J | 5.1 | 21 | 20 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S005 | N | 10 Apr 2015 | 3 - 4 | SW8270C-SIM | PAH | Anthracene | **8.6 J** | 5.7 | 11 | 2.5 | µg/kg | X | Y |
| SO | BVBS1296 | BVBS1296S005 | N | 10 Apr 2015 | 3 - 4 | SW8270C-SIM | PAH | Benzo(a)anthracene | 14 = | 5.7 | 11 | | µg/kg | | NC |
| SO | BVBS1296 | BVBS1296S005 | N | 10 Apr 2015 | 3 - 4 | SW8270C-SIM | PAH | Benzo(a)pyrene | 9.8 J | 5.7 | 11 | | µg/kg | | NC |
| SO | BVBS1296 | BVBS1296S005 | N | 10 Apr 2015 | 3 - 4 | SW8270C-SIM | PAH | Benzo(b)fluoranthene | 25 = | 5.7 | 11 | | µg/kg | | NC |
| SO | BVBS1296 | BVBS1296S005 | N | 10 Apr 2015 | 3 - 4 | SW8270C-SIM | PAH | Benzo(ghi)perylene | **32 =** | 5.7 | 11 | 2.5 | µg/kg | X | Y |
| SO | BVBS1296 | BVBS1296S005 | N | 10 Apr 2015 | 3 - 4 | SW8270C-SIM | PAH | Benzo(k)fluoranthene | 7.7 J | 5.7 | 11 | | µg/kg | | NC |
| SO | BVBS1296 | BVBS1296S005 | N | 10 Apr 2015 | 3 - 4 | SW8270C-SIM | PHTH | Bis(2-ethylhexyl)phthalate | **2000 =** | 11 | 23 | 61 | µg/kg | X | Y |
| SO | BVBS1296 | BVBS1296S005 | N | 10 Apr 2015 | 3 - 4 | SW8270C-SIM | PAH | Chrysene | 13 = | 5.7 | 11 | | µg/kg | | NC |
| SO | BVBS1296 | BVBS1296S005 | N | 10 Apr 2015 | 3 - 4 | SW8270C-SIM | PHTH | Di-n-octyl phthalate | 12 J | 11 | 23 | 27 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S005 | N | 10 Apr 2015 | 3 - 4 | SW8270C-SIM | PAH | Fluoranthene | **59 =** | 5.7 | 11 | 5.2 | µg/kg | X | Y |
| SO | BVBS1296 | BVBS1296S005 | N | 10 Apr 2015 | 3 - 4 | SW8270C-SIM | PAH | Indeno(1,2,3-cd)pyrene | 19 = | 5.7 | 11 | | µg/kg | | NC |
| SO | BVBS1296 | BVBS1296S005 | N | 10 Apr 2015 | 3 - 4 | SW8270C-SIM | PAH | Naphthalene | **6.4 J** | 5.7 | 11 | 3.6 | µg/kg | X | Y |
| SO | BVBS1296 | BVBS1296S005 | N | 10 Apr 2015 | 3 - 4 | SW8270C-SIM | PAH | PAHTEQM | **16.5 =** | | | 4.47 | µg/kg | X | Y |
| SO | BVBS1296 | BVBS1296S005 | N | 10 Apr 2015 | 3 - 4 | SW8270C-SIM | PAH | Phenanthrene | **12 =** | 5.7 | 11 | 3.9 | µg/kg | X | Y |
| SO | BVBS1296 | BVBS1296S005 | N | 10 Apr 2015 | 3 - 4 | SW8270C-SIM | PAH | Pyrene | **95 =** | 5.7 | 11 | 5.6 | µg/kg | X | Y |
| SO | BVBS1296 | BVBS1296S005 | N | 10 Apr 2015 | 3 - 4 | SW9045D | GENCHEM | pH | 4.69 = | | | | pH units | | NC |
| SO | BVBS1296 | BVBS1296S006 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | Acetone | **21 =** | 4.9 | 19 | 20 | µg/kg | X | Y |
| SO | BVBS1296 | BVBS1296S006 | N | 10 Apr 2015 | 7 - 8 | SW9045D | GENCHEM | pH | 8 = | | | | pH units | | NC |
| SO | BVBS1297 | BVBS1297S001 | N | 3 Mar 2015 | 4 - 5 | SW8015B | HC | Diesel Range Organics (C12-C14) | **4000000 =** | 59000 | 120000 | 5000 | µg/kg | X | Y |
| SO | BVBS1297 | BVBS1297S001 | N | 3 Mar 2015 | 4 - 5 | SW8015B | HC | Diesel Range Organics (C15-C20) | **2800000 =** | 59000 | 120000 | 5000 | µg/kg | X | Y |
| SO | BVBS1297 | BVBS1297S001 | N | 3 Mar 2015 | 4 - 5 | SW8015B | HC | Diesel Range Organics (C8-C11) | **1100000 =** | 59000 | 120000 | 1000 | µg/kg | X | Y |
| SO | BVBS1297 | BVBS1297S001 | N | 3 Mar 2015 | 4 - 5 | SW8015B | HC | GRO (C4-C12) | **1300000 =** | 9600 | 19000 | 1000 | µg/kg | X | Y |
| SO | BVBS1297 | BVBS1297S001 | N | 3 Mar 2015 | 4 - 5 | SW8015B | HC | TOTAL EFH(C8-C40) | **7900000 =** | 59000 | 120000 | 10000 | µg/kg | X | Y |
| SO | BVBS1297 | BVBS1297S001 | N | 3 Mar 2015 | 4 - 5 | SW8260B | VOC | 1,2,4-Trimethylbenzene | **8.1 J** | 0.93 | 4.6 | 5 | µg/kg | X | Y |

TABLE 9-3
**Detected Analytical Data 2015 Biovent Soil Sampling**
*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (feet) | Method | Class | Analyte | Final Result | MDL | RL | SL | Units | Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1297 | BVBS1297S001 | N | 3 Mar 2015 | 4 - 5 | SW8260B | VOC | 2-Butanone (MEK) | 7.4 J | 4.6 | 19 | 20 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S001 | N | 3 Mar 2015 | 4 - 5 | SW8260B | VOC | Acetone | **32 J** | 4.6 | 19 | 20 | µg/kg | X | Y |
| SO | BVBS1297 | BVBS1297S001 | N | 3 Mar 2015 | 4 - 5 | SW8260B | VOC | Isopropylbenzene | 1.7 J | 0.93 | 4.6 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S001 | N | 3 Mar 2015 | 4 - 5 | SW8260B | VOC | n-Propylbenzene | 4.1 J | 0.93 | 4.6 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S001 | N | 3 Mar 2015 | 4 - 5 | SW8260B | VOC | o-Xylene | 1.1 J | 0.93 | 4.6 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S001 | N | 3 Mar 2015 | 4 - 5 | SW8260B | VOC | p-Isopropyltoluene | 1.5 J | 0.93 | 4.6 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S001 | N | 3 Mar 2015 | 4 - 5 | SW8260B | VOC | sec-Butylbenzene | **9 J** | 0.93 | 4.6 | 5 | µg/kg | X | Y |
| SO | BVBS1297 | BVBS1297S001 | N | 3 Mar 2015 | 4 - 5 | SW8260B | VOC | tert-Butylbenzene | 1.1 J | 0.93 | 4.6 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S001 | N | 3 Mar 2015 | 4 - 5 | SW8260B | VOC | Trichloroethene | 1.3 J | 0.93 | 4.6 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S001 | N | 3 Mar 2015 | 4 - 5 | SW8270C-SIM | PAH | Acenaphthene | **170 J** | 5.9 | 12 | 2.5 | µg/kg | X | Y |
| SO | BVBS1297 | BVBS1297S001 | N | 3 Mar 2015 | 4 - 5 | SW8270C-SIM | PAH | Anthracene | **60 J** | 5.9 | 12 | 2.5 | µg/kg | X | Y |
| SO | BVBS1297 | BVBS1297S001 | N | 3 Mar 2015 | 4 - 5 | SW8270C-SIM | PAH | Benzo(a)anthracene | 54 J | 5.9 | 12 | | µg/kg | | NC |
| SO | BVBS1297 | BVBS1297S001 | N | 3 Mar 2015 | 4 - 5 | SW8270C-SIM | PAH | Benzo(a)pyrene | 58 J | 5.9 | 12 | | µg/kg | | NC |
| SO | BVBS1297 | BVBS1297S001 | N | 3 Mar 2015 | 4 - 5 | SW8270C-SIM | PAH | Benzo(b)fluoranthene | 65 J | 5.9 | 12 | | µg/kg | | NC |
| SO | BVBS1297 | BVBS1297S001 | N | 3 Mar 2015 | 4 - 5 | SW8270C-SIM | PAH | Benzo(ghi)perylene | **98 J** | 5.9 | 12 | 2.5 | µg/kg | X | Y |
| SO | BVBS1297 | BVBS1297S001 | N | 3 Mar 2015 | 4 - 5 | SW8270C-SIM | PAH | Benzo(k)fluoranthene | 19 J | 5.9 | 12 | | µg/kg | | NC |
| SO | BVBS1297 | BVBS1297S001 | N | 3 Mar 2015 | 4 - 5 | SW8270C-SIM | PHTH | Bis(2-ethylhexyl)phthalate | **1100 J** | 12 | 24 | 61 | µg/kg | X | Y |
| SO | BVBS1297 | BVBS1297S001 | N | 3 Mar 2015 | 4 - 5 | SW8270C-SIM | PAH | Chrysene | 39 J | 5.9 | 12 | | µg/kg | | NC |
| SO | BVBS1297 | BVBS1297S001 | N | 3 Mar 2015 | 4 - 5 | SW8270C-SIM | PAH | Fluoranthene | **290 J** | 5.9 | 12 | 5.2 | µg/kg | X | Y |
| SO | BVBS1297 | BVBS1297S001 | N | 3 Mar 2015 | 4 - 5 | SW8270C-SIM | PAH | Fluorene | **110 J** | 5.9 | 12 | 3.8 | µg/kg | X | Y |
| SO | BVBS1297 | BVBS1297S001 | N | 3 Mar 2015 | 4 - 5 | SW8270C-SIM | PAH | Indeno(1,2,3-cd)pyrene | 49 J | 5.9 | 12 | | µg/kg | | NC |
| SO | BVBS1297 | BVBS1297S001 | N | 3 Mar 2015 | 4 - 5 | SW8270C-SIM | PAH | PAHTEQM | **77.09 =** | | | 4.47 | µg/kg | X | Y |
| SO | BVBS1297 | BVBS1297S001 | N | 3 Mar 2015 | 4 - 5 | SW8270C-SIM | PAH | Phenanthrene | **160 J** | 5.9 | 12 | 3.9 | µg/kg | X | Y |
| SO | BVBS1297 | BVBS1297S001 | N | 3 Mar 2015 | 4 - 5 | SW8270C-SIM | PAH | Pyrene | **380 J** | 5.9 | 12 | 5.6 | µg/kg | X | Y |
| SO | BVBS1297 | BVBS1297S001 | N | 3 Mar 2015 | 4 - 5 | SW9045D | GENCHEM | pH | 7.23 = | | | | pH units | | NC |
| SO | BVBS1297 | BVBS1297S002 | N | 3 Mar 2015 | 7 - 8 | SW8015B | HC | GRO (C4-C12) | 660 J | 470 | 930 | 1000 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S002 | N | 3 Mar 2015 | 7 - 8 | SW8015B | HC | TOTAL EFH(C8-C40) | 3100 J | 2700 | 5400 | 10000 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | Acetone | 5 J | 4.7 | 19 | 20 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S002 | N | 3 Mar 2015 | 7 - 8 | SW9045D | GENCHEM | pH | 8.46 = | | | | pH units | | NC |
| SO | BVBS1297 | BVBS1297S003 | N | 10 Apr 2015 | 4 - 5 | M8015D | HC | Diesel Range Organics (C12-C14) | **2500000 =** | 29000 | 59000 | 5000 | µg/kg | X | Y |
| SO | BVBS1297 | BVBS1297S003 | N | 10 Apr 2015 | 4 - 5 | M8015D | HC | Diesel Range Organics (C15-C20) | **2100000 =** | 29000 | 59000 | 5000 | µg/kg | X | Y |
| SO | BVBS1297 | BVBS1297S003 | N | 10 Apr 2015 | 4 - 5 | M8015D | HC | Diesel Range Organics (C21-C30) | **47000 J** | 29000 | 59000 | 5000 | µg/kg | X | Y |
| SO | BVBS1297 | BVBS1297S003 | N | 10 Apr 2015 | 4 - 5 | M8015D | HC | Diesel Range Organics (C8-C11) | **440000 =** | 29000 | 59000 | 1000 | µg/kg | X | Y |
| SO | BVBS1297 | BVBS1297S003 | N | 10 Apr 2015 | 4 - 5 | M8015D | HC | TOTAL EFH(C8-C40) | **5100000 =** | 29000 | 59000 | 10000 | µg/kg | X | Y |
| SO | BVBS1297 | BVBS1297S003 | N | 10 Apr 2015 | 4 - 5 | SW8015B | HC | GRO (C4-C12) | **1100000 =** | 11000 | 22000 | 1000 | µg/kg | X | Y |
| SO | BVBS1297 | BVBS1297S003 | N | 10 Apr 2015 | 4 - 5 | SW8260B | VOC | 1,1,1-Trichloroethane | 1.2 J | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S003 | N | 10 Apr 2015 | 4 - 5 | SW8260B | VOC | 1,2,4-Trimethylbenzene | 3.1 J | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S003 | N | 10 Apr 2015 | 4 - 5 | SW8260B | VOC | Acetone | **59 J** | 5.2 | 21 | 20 | µg/kg | X | Y |
| SO | BVBS1297 | BVBS1297S003 | N | 10 Apr 2015 | 4 - 5 | SW8260B | VOC | sec-Butylbenzene | 1.9 J | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S003 | N | 10 Apr 2015 | 4 - 5 | SW8270C-SIM | PAH | Acenaphthene | **88 J** | 5.9 | 12 | 2.5 | µg/kg | X | Y |
| SO | BVBS1297 | BVBS1297S003 | N | 10 Apr 2015 | 4 - 5 | SW8270C-SIM | PAH | Anthracene | **60 J** | 5.9 | 12 | 2.5 | µg/kg | X | Y |
| SO | BVBS1297 | BVBS1297S003 | N | 10 Apr 2015 | 4 - 5 | SW8270C-SIM | PAH | Benzo(a)anthracene | 44 J | 5.9 | 12 | | µg/kg | | NC |
| SO | BVBS1297 | BVBS1297S003 | N | 10 Apr 2015 | 4 - 5 | SW8270C-SIM | PAH | Benzo(a)pyrene | 49 J | 5.9 | 12 | | µg/kg | | NC |
| SO | BVBS1297 | BVBS1297S003 | N | 10 Apr 2015 | 4 - 5 | SW8270C-SIM | PAH | Benzo(b)fluoranthene | 59 J | 5.9 | 12 | | µg/kg | | NC |
| SO | BVBS1297 | BVBS1297S003 | N | 10 Apr 2015 | 4 - 5 | SW8270C-SIM | PAH | Benzo(ghi)perylene | **78 J** | 5.9 | 12 | 2.5 | µg/kg | X | Y |
| SO | BVBS1297 | BVBS1297S003 | N | 10 Apr 2015 | 4 - 5 | SW8270C-SIM | PAH | Benzo(k)fluoranthene | 17 J | 5.9 | 12 | | µg/kg | | NC |

TABLE 9-3
**Detected Analytical Data 2015 Biovent Soil Sampling**
*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (feet) | Method | Class | Analyte | Final Result | MDL | RL | SL | Units | Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1297 | BVBS1297S003 | N | 10 Apr 2015 | 4 - 5 | SW8270C-SIM | PHTH | Bis(2-ethylhexyl)phthalate | **1200 J** | 12 | 23 | 61 | µg/kg | X | Y |
| SO | BVBS1297 | BVBS1297S003 | N | 10 Apr 2015 | 4 - 5 | SW8270C-SIM | PAH | Chrysene | 34 J | 5.9 | 12 | | µg/kg | | NC |
| SO | BVBS1297 | BVBS1297S003 | N | 10 Apr 2015 | 4 - 5 | SW8270C-SIM | PHTH | Di-n-octyl phthalate | **44 J** | 12 | 23 | 27 | µg/kg | X | Y |
| SO | BVBS1297 | BVBS1297S003 | N | 10 Apr 2015 | 4 - 5 | SW8270C-SIM | PAH | Fluoranthene | **240 J** | 5.9 | 12 | 5.2 | µg/kg | X | Y |
| SO | BVBS1297 | BVBS1297S003 | N | 10 Apr 2015 | 4 - 5 | SW8270C-SIM | PAH | Fluorene | **120 J** | 5.9 | 12 | 3.8 | µg/kg | X | Y |
| SO | BVBS1297 | BVBS1297S003 | N | 10 Apr 2015 | 4 - 5 | SW8270C-SIM | PAH | Indeno(1,2,3-cd)pyrene | 39 J | 5.9 | 12 | | µg/kg | | NC |
| SO | BVBS1297 | BVBS1297S003 | N | 10 Apr 2015 | 4 - 5 | SW8270C-SIM | PAH | PAHTEQM | **65.24 =** | | | 4.47 | µg/kg | X | Y |
| SO | BVBS1297 | BVBS1297S003 | N | 10 Apr 2015 | 4 - 5 | SW8270C-SIM | PAH | Phenanthrene | **320 J** | 5.9 | 12 | 3.9 | µg/kg | X | Y |
| SO | BVBS1297 | BVBS1297S003 | N | 10 Apr 2015 | 4 - 5 | SW8270C-SIM | PAH | Pyrene | **310 J** | 5.9 | 12 | 5.6 | µg/kg | X | Y |
| SO | BVBS1297 | BVBS1297S003 | N | 10 Apr 2015 | 4 - 5 | SW9045D | GENCHEM | pH | 7.09 = | | | | pH units | | NC |
| SO | BVBS1297 | BVBS1297S004 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | Acetone | 8.7 J | 4.7 | 19 | 20 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S004 | N | 10 Apr 2015 | 7 - 8 | SW9045D | GENCHEM | pH | 8.11 = | | | | pH units | | NC |
| SO | BVBS1298 | BVBS1298S001 | N | 3 Mar 2015 | 4 - 5 | SW8015B | HC | Diesel Range Organics (C12-C14) | **9800000 =** | 61000 | 120000 | 5000 | µg/kg | X | Y |
| SO | BVBS1298 | BVBS1298S001 | N | 3 Mar 2015 | 4 - 5 | SW8015B | HC | Diesel Range Organics (C15-C20) | **5100000 =** | 61000 | 120000 | 5000 | µg/kg | X | Y |
| SO | BVBS1298 | BVBS1298S001 | N | 3 Mar 2015 | 4 - 5 | SW8015B | HC | Diesel Range Organics (C21-C30) | **90000 J** | 61000 | 120000 | 5000 | µg/kg | X | Y |
| SO | BVBS1298 | BVBS1298S001 | N | 3 Mar 2015 | 4 - 5 | SW8015B | HC | Diesel Range Organics (C8-C11) | **3300000 =** | 61000 | 120000 | 1000 | µg/kg | X | Y |
| SO | BVBS1298 | BVBS1298S001 | N | 3 Mar 2015 | 4 - 5 | SW8015B | HC | GRO (C4-C12) | **2000000 =** | 51000 | 100000 | 1000 | µg/kg | X | Y |
| SO | BVBS1298 | BVBS1298S001 | N | 3 Mar 2015 | 4 - 5 | SW8015B | HC | TOTAL EFH(C8-C40) | **18000000=** | 61000 | 120000 | 10000 | µg/kg | X | Y |
| SO | BVBS1298 | BVBS1298S001 | N | 3 Mar 2015 | 4 - 5 | SW8260B | VOC | 1,2,4-Trimethylbenzene | **7.4 J** | 0.98 | 4.9 | 5 | µg/kg | X | Y |
| SO | BVBS1298 | BVBS1298S001 | N | 3 Mar 2015 | 4 - 5 | SW8260B | VOC | 1,3,5-Trimethylbenzene | 3.2 J | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S001 | N | 3 Mar 2015 | 4 - 5 | SW8260B | VOC | Acetone | 7.5 J | 4.9 | 20 | 20 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S001 | N | 3 Mar 2015 | 4 - 5 | SW8260B | VOC | Ethylbenzene | **19 J** | 0.98 | 4.9 | 5 | µg/kg | X | Y |
| SO | BVBS1298 | BVBS1298S001 | N | 3 Mar 2015 | 4 - 5 | SW8260B | VOC | Isopropylbenzene | **20 J** | 0.98 | 4.9 | 5 | µg/kg | X | Y |
| SO | BVBS1298 | BVBS1298S001 | N | 3 Mar 2015 | 4 - 5 | SW8260B | VOC | m,p-Xylenes | 3.6 J | 2 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S001 | N | 3 Mar 2015 | 4 - 5 | SW8260B | VOC | n-Propylbenzene | **34 J** | 0.98 | 4.9 | 5 | µg/kg | X | Y |
| SO | BVBS1298 | BVBS1298S001 | N | 3 Mar 2015 | 4 - 5 | SW8260B | VOC | o-Xylene | **7.2 J** | 0.98 | 4.9 | 5 | µg/kg | X | Y |
| SO | BVBS1298 | BVBS1298S001 | N | 3 Mar 2015 | 4 - 5 | SW8260B | VOC | p-Isopropyltoluene | 4.2 J | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S001 | N | 3 Mar 2015 | 4 - 5 | SW8260B | VOC | sec-Butylbenzene | **35 J** | 0.98 | 4.9 | 5 | µg/kg | X | Y |
| SO | BVBS1298 | BVBS1298S001 | N | 3 Mar 2015 | 4 - 5 | SW8260B | VOC | tert-Butylbenzene | 3 J | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S001 | N | 3 Mar 2015 | 4 - 5 | SW8260B | VOC | Toluene | 2.9 J | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S001 | N | 3 Mar 2015 | 4 - 5 | SW8270C-SIM | PAH | Acenaphthene | **200 J** | 12 | 24 | 2.5 | µg/kg | X | Y |
| SO | BVBS1298 | BVBS1298S001 | N | 3 Mar 2015 | 4 - 5 | SW8270C-SIM | PAH | Anthracene | **100 J** | 12 | 24 | 2.5 | µg/kg | X | Y |
| SO | BVBS1298 | BVBS1298S001 | N | 3 Mar 2015 | 4 - 5 | SW8270C-SIM | PAH | Benzo(a)anthracene | 95 J | 12 | 24 | | µg/kg | | NC |
| SO | BVBS1298 | BVBS1298S001 | N | 3 Mar 2015 | 4 - 5 | SW8270C-SIM | PAH | Benzo(a)pyrene | 98 J | 12 | 24 | | µg/kg | | NC |
| SO | BVBS1298 | BVBS1298S001 | N | 3 Mar 2015 | 4 - 5 | SW8270C-SIM | PAH | Benzo(b)fluoranthene | 110 J | 12 | 24 | | µg/kg | | NC |
| SO | BVBS1298 | BVBS1298S001 | N | 3 Mar 2015 | 4 - 5 | SW8270C-SIM | PAH | Benzo(ghi)perylene | **160 J** | 12 | 24 | 2.5 | µg/kg | X | Y |
| SO | BVBS1298 | BVBS1298S001 | N | 3 Mar 2015 | 4 - 5 | SW8270C-SIM | PAH | Benzo(k)fluoranthene | 26 J | 12 | 24 | | µg/kg | | NC |
| SO | BVBS1298 | BVBS1298S001 | N | 3 Mar 2015 | 4 - 5 | SW8270C-SIM | PHTH | Bis(2-ethylhexyl)phthalate | **2900 J** | 24 | 49 | 61 | µg/kg | X | Y |
| SO | BVBS1298 | BVBS1298S001 | N | 3 Mar 2015 | 4 - 5 | SW8270C-SIM | PAH | Chrysene | 77 J | 12 | 24 | | µg/kg | | NC |
| SO | BVBS1298 | BVBS1298S001 | N | 3 Mar 2015 | 4 - 5 | SW8270C-SIM | PHTH | Di-n-octyl phthalate | **67 J** | 24 | 49 | 27 | µg/kg | X | Y |
| SO | BVBS1298 | BVBS1298S001 | N | 3 Mar 2015 | 4 - 5 | SW8270C-SIM | PAH | Fluoranthene | **490 J** | 12 | 24 | 5.2 | µg/kg | X | Y |
| SO | BVBS1298 | BVBS1298S001 | N | 3 Mar 2015 | 4 - 5 | SW8270C-SIM | PAH | Fluorene | **170 J** | 12 | 24 | 3.8 | µg/kg | X | Y |
| SO | BVBS1298 | BVBS1298S001 | N | 3 Mar 2015 | 4 - 5 | SW8270C-SIM | PAH | Indeno(1,2,3-cd)pyrene | 78 J | 12 | 24 | | µg/kg | | NC |
| SO | BVBS1298 | BVBS1298S001 | N | 3 Mar 2015 | 4 - 5 | SW8270C-SIM | PAH | PAHTEQM | **129.67 =** | | | 4.47 | µg/kg | X | Y |
| SO | BVBS1298 | BVBS1298S001 | N | 3 Mar 2015 | 4 - 5 | SW8270C-SIM | PAH | Phenanthrene | **300 J** | 12 | 24 | 3.9 | µg/kg | X | Y |
| SO | BVBS1298 | BVBS1298S001 | N | 3 Mar 2015 | 4 - 5 | SW8270C-SIM | PAH | Pyrene | **640 J** | 12 | 24 | 5.6 | µg/kg | X | Y |

TABLE 9-3
**Detected Analytical Data 2015 Biovent Soil Sampling**
*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (feet) | Method | Class | Analyte | Final Result | MDL | RL | SL | Units | Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1298 | BVBS1298S001 | N | 3 Mar 2015 | 4 - 5 | SW9045D | GENCHEM | pH | 7.97 = | | | | pH units | | NC |
| SO | BVBS1298 | BVBS1298S002 | N | 3 Mar 2015 | 7 - 8 | SW8015B | HC | Diesel Range Organics (C12-C14) | **28000 =** | 2800 | 5600 | 5000 | µg/kg | X | Y |
| SO | BVBS1298 | BVBS1298S002 | N | 3 Mar 2015 | 7 - 8 | SW8015B | HC | Diesel Range Organics (C15-C20) | **39000 =** | 2800 | 5600 | 5000 | µg/kg | X | Y |
| SO | BVBS1298 | BVBS1298S002 | N | 3 Mar 2015 | 7 - 8 | SW8015B | HC | Diesel Range Organics (C21-C30) | 2900 J | 2800 | 5600 | 5000 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S002 | N | 3 Mar 2015 | 7 - 8 | SW8015B | HC | Diesel Range Organics (C8-C11) | **6600 =** | 2800 | 5600 | 1000 | µg/kg | X | Y |
| SO | BVBS1298 | BVBS1298S002 | N | 3 Mar 2015 | 7 - 8 | SW8015B | HC | GRO (C4-C12) | **12000 =** | 430 | 870 | 1000 | µg/kg | X | Y |
| SO | BVBS1298 | BVBS1298S002 | N | 3 Mar 2015 | 7 - 8 | SW8015B | HC | ORO (C31-C40) | 7600 J | 5600 | 11000 | 10000 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S002 | N | 3 Mar 2015 | 7 - 8 | SW8015B | HC | TOTAL EFH(C8-C40) | **84000 =** | 2800 | 5600 | 10000 | µg/kg | X | Y |
| SO | BVBS1298 | BVBS1298S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | 2-Butanone (MEK) | 7.5 J | 4.9 | 20 | 20 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | Acetone | **42 =** | 4.9 | 20 | 20 | µg/kg | X | Y |
| SO | BVBS1298 | BVBS1298S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | sec-Butylbenzene | 1.1 J | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S002 | N | 3 Mar 2015 | 7 - 8 | SW8270C-SIM | PHTH | Bis(2-ethylhexyl)phthalate | 48 = | 11 | 22 | 61 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S002 | N | 3 Mar 2015 | 7 - 8 | SW8270C-SIM | PAH | Fluoranthene | **6.5 J** | 5.6 | 11 | 5.2 | µg/kg | X | Y |
| SO | BVBS1298 | BVBS1298S002 | N | 3 Mar 2015 | 7 - 8 | SW8270C-SIM | PAH | Pyrene | **7.8 J** | 5.6 | 11 | 5.6 | µg/kg | X | Y |
| SO | BVBS1298 | BVBS1298S002 | N | 3 Mar 2015 | 7 - 8 | SW9045D | GENCHEM | pH | 7.92 = | | | | pH units | | NC |
| SO | BVBS1298 | BVBS1298S003 | N | 10 Apr 2015 | 4 - 5 | M8015D | HC | Diesel Range Organics (C12-C14) | **5400000 =** | 30000 | 60000 | 5000 | µg/kg | X | Y |
| SO | BVBS1298 | BVBS1298S003 | N | 10 Apr 2015 | 4 - 5 | M8015D | HC | Diesel Range Organics (C15-C20) | **3000000 =** | 30000 | 60000 | 5000 | µg/kg | X | Y |
| SO | BVBS1298 | BVBS1298S003 | N | 10 Apr 2015 | 4 - 5 | M8015D | HC | Diesel Range Organics (C21-C30) | **110000 =** | 30000 | 60000 | 5000 | µg/kg | X | Y |
| SO | BVBS1298 | BVBS1298S003 | N | 10 Apr 2015 | 4 - 5 | M8015D | HC | Diesel Range Organics (C8-C11) | **1200000 =** | 30000 | 60000 | 1000 | µg/kg | X | Y |
| SO | BVBS1298 | BVBS1298S003 | N | 10 Apr 2015 | 4 - 5 | M8015D | HC | TOTAL EFH(C8-C40) | **9700000 =** | 30000 | 60000 | 10000 | µg/kg | X | Y |
| SO | BVBS1298 | BVBS1298S003 | N | 10 Apr 2015 | 4 - 5 | SW8015B | HC | GRO (C4-C12) | **1700000 =** | 26000 | 53000 | 1000 | µg/kg | X | Y |
| SO | BVBS1298 | BVBS1298S003 | N | 10 Apr 2015 | 4 - 5 | SW8260B | VOC | 1,2,4-Trimethylbenzene | 2.6 J | 0.96 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S003 | N | 10 Apr 2015 | 4 - 5 | SW8260B | VOC | 1,3,5-Trimethylbenzene | 1.4 J | 0.96 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S003 | N | 10 Apr 2015 | 4 - 5 | SW8260B | VOC | Acetone | **23 J** | 4.8 | 19 | 20 | µg/kg | X | Y |
| SO | BVBS1298 | BVBS1298S003 | N | 10 Apr 2015 | 4 - 5 | SW8260B | VOC | Ethylbenzene | **5.3 J** | 0.96 | 4.8 | 5 | µg/kg | X | Y |
| SO | BVBS1298 | BVBS1298S003 | N | 10 Apr 2015 | 4 - 5 | SW8260B | VOC | Isopropylbenzene | 4.7 J | 0.96 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S003 | N | 10 Apr 2015 | 4 - 5 | SW8260B | VOC | n-Propylbenzene | **9.3 J** | 0.96 | 4.8 | 5 | µg/kg | X | Y |
| SO | BVBS1298 | BVBS1298S003 | N | 10 Apr 2015 | 4 - 5 | SW8260B | VOC | o-Xylene | 2.5 J | 0.96 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S003 | N | 10 Apr 2015 | 4 - 5 | SW8260B | VOC | p-Isopropyltoluene | 1.5 J | 0.96 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S003 | N | 10 Apr 2015 | 4 - 5 | SW8260B | VOC | sec-Butylbenzene | **15 J** | 0.96 | 4.8 | 5 | µg/kg | X | Y |
| SO | BVBS1298 | BVBS1298S003 | N | 10 Apr 2015 | 4 - 5 | SW8260B | VOC | tert-Butylbenzene | 1.1 J | 0.96 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S003 | N | 10 Apr 2015 | 4 - 5 | SW8270C-SIM | PAH | Acenaphthene | **120 J** | 6 | 12 | 2.5 | µg/kg | X | Y |
| SO | BVBS1298 | BVBS1298S003 | N | 10 Apr 2015 | 4 - 5 | SW8270C-SIM | PAH | Anthracene | **77 J** | 6 | 12 | 2.5 | µg/kg | X | Y |
| SO | BVBS1298 | BVBS1298S003 | N | 10 Apr 2015 | 4 - 5 | SW8270C-SIM | PAH | Benzo(a)anthracene | 44 J | 6 | 12 | | µg/kg | | NC |
| SO | BVBS1298 | BVBS1298S003 | N | 10 Apr 2015 | 4 - 5 | SW8270C-SIM | PAH | Benzo(a)pyrene | 61 J | 6 | 12 | | µg/kg | | NC |
| SO | BVBS1298 | BVBS1298S003 | N | 10 Apr 2015 | 4 - 5 | SW8270C-SIM | PAH | Benzo(b)fluoranthene | 69 J | 6 | 12 | | µg/kg | | NC |
| SO | BVBS1298 | BVBS1298S003 | N | 10 Apr 2015 | 4 - 5 | SW8270C-SIM | PAH | Benzo(ghi)perylene | **93 J** | 6 | 12 | 2.5 | µg/kg | X | Y |
| SO | BVBS1298 | BVBS1298S003 | N | 10 Apr 2015 | 4 - 5 | SW8270C-SIM | PAH | Benzo(k)fluoranthene | 21 J | 6 | 12 | | µg/kg | | NC |
| SO | BVBS1298 | BVBS1298S003 | N | 10 Apr 2015 | 4 - 5 | SW8270C-SIM | PHTH | Bis(2-ethylhexyl)phthalate | **1300 J** | 12 | 24 | 61 | µg/kg | X | Y |
| SO | BVBS1298 | BVBS1298S003 | N | 10 Apr 2015 | 4 - 5 | SW8270C-SIM | PAH | Chrysene | 50 J | 6 | 12 | | µg/kg | | NC |
| SO | BVBS1298 | BVBS1298S003 | N | 10 Apr 2015 | 4 - 5 | SW8270C-SIM | PHTH | Di-n-octyl phthalate | **41 J** | 12 | 24 | 27 | µg/kg | X | Y |
| SO | BVBS1298 | BVBS1298S003 | N | 10 Apr 2015 | 4 - 5 | SW8270C-SIM | PAH | Fluoranthene | **290 J** | 6 | 12 | 5.2 | µg/kg | X | Y |
| SO | BVBS1298 | BVBS1298S003 | N | 10 Apr 2015 | 4 - 5 | SW8270C-SIM | PAH | Fluorene | **150 J** | 6 | 12 | 3.8 | µg/kg | X | Y |
| SO | BVBS1298 | BVBS1298S003 | N | 10 Apr 2015 | 4 - 5 | SW8270C-SIM | PAH | Indeno(1,2,3-cd)pyrene | 47 J | 6 | 12 | | µg/kg | | NC |
| SO | BVBS1298 | BVBS1298S003 | N | 10 Apr 2015 | 4 - 5 | SW8270C-SIM | PAH | PAHTEQM | **79.6 =** | | | 4.47 | µg/kg | X | Y |
| SO | BVBS1298 | BVBS1298S003 | N | 10 Apr 2015 | 4 - 5 | SW8270C-SIM | PAH | Phenanthrene | **200 J** | 6 | 12 | 3.9 | µg/kg | X | Y |

TABLE 9-3
**Detected Analytical Data 2015 Biovent Soil Sampling**
*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (feet) | Method | Class | Analyte | Final Result | MDL | RL | SL | Units | Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1298 | BVBS1298S003 | N | 10 Apr 2015 | 4 - 5 | SW8270C-SIM | PAH | Pyrene | **350 J** | 6 | 12 | 5.6 | µg/kg | X | Y |
| SO | BVBS1298 | BVBS1298S003 | N | 10 Apr 2015 | 4 - 5 | SW9045D | GENCHEM | pH | 7.72 = | | | | pH units | | NC |
| SO | BVBS1298 | BVBS1298S004 | N | 10 Apr 2015 | 6 - 8 | M8015D | HC | Diesel Range Organics (C12-C14) | **330000 J** | 2800 | 5700 | 5000 | µg/kg | X | Y |
| SO | BVBS1298 | BVBS1298S004 | N | 10 Apr 2015 | 6 - 8 | M8015D | HC | Diesel Range Organics (C15-C20) | **310000 J** | 2800 | 5700 | 5000 | µg/kg | X | Y |
| SO | BVBS1298 | BVBS1298S004 | N | 10 Apr 2015 | 6 - 8 | M8015D | HC | Diesel Range Organics (C21-C30) | **22000 J** | 2800 | 5700 | 5000 | µg/kg | X | Y |
| SO | BVBS1298 | BVBS1298S004 | N | 10 Apr 2015 | 6 - 8 | M8015D | HC | TOTAL EFH(C8-C40) | **680000 J** | 2800 | 5700 | 10000 | µg/kg | X | Y |
| SO | BVBS1298 | BVBS1298S004 | N | 10 Apr 2015 | 6 - 8 | SW8015B | HC | GRO (C4-C12) | **84000 =** | 930 | 1900 | 1000 | µg/kg | X | Y |
| SO | BVBS1298 | BVBS1298S004 | N | 10 Apr 2015 | 6 - 8 | SW8260B | VOC | 1,2,4-Trimethylbenzene | 3 J | 0.9 | 4.5 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S004 | N | 10 Apr 2015 | 6 - 8 | SW8260B | VOC | 1,3,5-Trimethylbenzene | 1 J | 0.9 | 4.5 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S004 | N | 10 Apr 2015 | 6 - 8 | SW8260B | VOC | Acetone | **33 =** | 4.5 | 18 | 20 | µg/kg | X | Y |
| SO | BVBS1298 | BVBS1298S004 | N | 10 Apr 2015 | 6 - 8 | SW8260B | VOC | n-butylbenzene | 3.1 J | 0.9 | 4.5 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S004 | N | 10 Apr 2015 | 6 - 8 | SW8260B | VOC | n-Propylbenzene | 1 J | 0.9 | 4.5 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S004 | N | 10 Apr 2015 | 6 - 8 | SW8260B | VOC | p-Isopropyltoluene | 1.3 J | 0.9 | 4.5 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S004 | N | 10 Apr 2015 | 6 - 8 | SW8260B | VOC | sec-Butylbenzene | 2 J | 0.9 | 4.5 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S004 | N | 10 Apr 2015 | 6 - 8 | SW8270C-SIM | PAH | Acenaphthylene | **6.7 J** | 5.7 | 11 | 2.5 | µg/kg | X | Y |
| SO | BVBS1298 | BVBS1298S004 | N | 10 Apr 2015 | 6 - 8 | SW8270C-SIM | PHTH | Bis(2-ethylhexyl)phthalate | **76 =** | 11 | 23 | 61 | µg/kg | X | Y |
| SO | BVBS1298 | BVBS1298S004 | N | 10 Apr 2015 | 6 - 8 | SW8270C-SIM | PAH | Fluoranthene | **13 =** | 5.7 | 11 | 5.2 | µg/kg | X | Y |
| SO | BVBS1298 | BVBS1298S004 | N | 10 Apr 2015 | 6 - 8 | SW8270C-SIM | PAH | Phenanthrene | **13 =** | 5.7 | 11 | 3.9 | µg/kg | X | Y |
| SO | BVBS1298 | BVBS1298S004 | N | 10 Apr 2015 | 6 - 8 | SW8270C-SIM | PAH | Pyrene | **16 =** | 5.7 | 11 | 5.6 | µg/kg | X | Y |
| SO | BVBS1298 | BVBS1298S004 | N | 10 Apr 2015 | 6 - 8 | SW9045D | GENCHEM | pH | 8.04 = | | | | pH units | | NC |
| SO | BVBS1299 | BVBS1299S001 | N | 3 Mar 2015 | 4 - 5.5 | SW8015B | HC | Diesel Range Organics (C12-C14) | **3900000 =** | 66000 | 130000 | 5000 | µg/kg | X | Y |
| SO | BVBS1299 | BVBS1299S001 | N | 3 Mar 2015 | 4 - 5.5 | SW8015B | HC | Diesel Range Organics (C15-C20) | **2700000 =** | 66000 | 130000 | 5000 | µg/kg | X | Y |
| SO | BVBS1299 | BVBS1299S001 | N | 3 Mar 2015 | 4 - 5.5 | SW8015B | HC | Diesel Range Organics (C8-C11) | **1100000 =** | 66000 | 130000 | 1000 | µg/kg | X | Y |
| SO | BVBS1299 | BVBS1299S001 | N | 3 Mar 2015 | 4 - 5.5 | SW8015B | HC | GRO (C4-C12) | **680000 =** | 5700 | 11000 | 1000 | µg/kg | X | Y |
| SO | BVBS1299 | BVBS1299S001 | N | 3 Mar 2015 | 4 - 5.5 | SW8015B | HC | TOTAL EFH(C8-C40) | **7700000 =** | 66000 | 130000 | 10000 | µg/kg | X | Y |
| SO | BVBS1299 | BVBS1299S001 | N | 3 Mar 2015 | 4 - 5.5 | SW8260B | VOC | Acetone | **28 J** | 7.2 | 29 | 20 | µg/kg | X | Y |
| SO | BVBS1299 | BVBS1299S001 | N | 3 Mar 2015 | 4 - 5.5 | SW8260B | VOC | Ethylbenzene | 2.6 J | 1.4 | 7.2 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S001 | N | 3 Mar 2015 | 4 - 5.5 | SW8260B | VOC | Isopropylbenzene | 3.7 J | 1.4 | 7.2 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S001 | N | 3 Mar 2015 | 4 - 5.5 | SW8260B | VOC | Methylene chloride | 3.7 J | 2.9 | 14 | 10 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S001 | N | 3 Mar 2015 | 4 - 5.5 | SW8260B | VOC | n-Propylbenzene | **6.4 J** | 1.4 | 7.2 | 5 | µg/kg | X | Y |
| SO | BVBS1299 | BVBS1299S001 | N | 3 Mar 2015 | 4 - 5.5 | SW8260B | VOC | o-Xylene | 1.6 J | 1.4 | 7.2 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S001 | N | 3 Mar 2015 | 4 - 5.5 | SW8260B | VOC | sec-Butylbenzene | **24 =** | 1.4 | 7.2 | 5 | µg/kg | X | Y |
| SO | BVBS1299 | BVBS1299S001 | N | 3 Mar 2015 | 4 - 5.5 | SW8260B | VOC | tert-Butylbenzene | 2.2 J | 1.4 | 7.2 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S001 | N | 3 Mar 2015 | 4 - 5.5 | SW8260B | VOC | Trichloroethene | 1.5 J | 1.4 | 7.2 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S001 | N | 3 Mar 2015 | 4 - 5.5 | SW8270C-SIM | PAH | Anthracene | **14 =** | 6.6 | 13 | 2.5 | µg/kg | X | Y |
| SO | BVBS1299 | BVBS1299S001 | N | 3 Mar 2015 | 4 - 5.5 | SW8270C-SIM | PAH | Benzo(a)anthracene | 29 = | 6.6 | 13 | | µg/kg | | NC |
| SO | BVBS1299 | BVBS1299S001 | N | 3 Mar 2015 | 4 - 5.5 | SW8270C-SIM | PAH | Benzo(a)pyrene | 19 = | 6.6 | 13 | | µg/kg | | NC |
| SO | BVBS1299 | BVBS1299S001 | N | 3 Mar 2015 | 4 - 5.5 | SW8270C-SIM | PAH | Benzo(b)fluoranthene | 38 = | 6.6 | 13 | | µg/kg | | NC |
| SO | BVBS1299 | BVBS1299S001 | N | 3 Mar 2015 | 4 - 5.5 | SW8270C-SIM | PAH | Benzo(ghi)perylene | **58 =** | 6.6 | 13 | 2.5 | µg/kg | X | Y |
| SO | BVBS1299 | BVBS1299S001 | N | 3 Mar 2015 | 4 - 5.5 | SW8270C-SIM | PAH | Benzo(k)fluoranthene | 9.6 J | 6.6 | 13 | | µg/kg | | NC |
| SO | BVBS1299 | BVBS1299S001 | N | 3 Mar 2015 | 4 - 5.5 | SW8270C-SIM | PHTH | Bis(2-ethylhexyl)phthalate | **770 =** | 13 | 26 | 61 | µg/kg | X | Y |
| SO | BVBS1299 | BVBS1299S001 | N | 3 Mar 2015 | 4 - 5.5 | SW8270C-SIM | PAH | Chrysene | 22 J | 6.6 | 13 | | µg/kg | | NC |
| SO | BVBS1299 | BVBS1299S001 | N | 3 Mar 2015 | 4 - 5.5 | SW8270C-SIM | PHTH | Di-n-octyl phthalate | 25 J | 13 | 26 | 27 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S001 | N | 3 Mar 2015 | 4 - 5.5 | SW8270C-SIM | PAH | Fluoranthene | **110 J** | 6.6 | 13 | 5.2 | µg/kg | X | Y |
| SO | BVBS1299 | BVBS1299S001 | N | 3 Mar 2015 | 4 - 5.5 | SW8270C-SIM | PAH | Fluorene | **9.3 J** | 6.6 | 13 | 3.8 | µg/kg | X | Y |
| SO | BVBS1299 | BVBS1299S001 | N | 3 Mar 2015 | 4 - 5.5 | SW8270C-SIM | PAH | Indeno(1,2,3-cd)pyrene | 35 = | 6.6 | 13 | | µg/kg | | NC |

TABLE 9-3
**Detected Analytical Data 2015 Biovent Soil Sampling**
*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (feet) | Method | Class | Analyte | Final Result | MDL | RL | SL | Units | Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1299 | BVBS1299S001 | N | 3 Mar 2015 | 4 - 5.5 | SW8270C-SIM | PAH | PAHTEQM | **30.38 =** | | | 4.47 | µg/kg | X | Y |
| SO | BVBS1299 | BVBS1299S001 | N | 3 Mar 2015 | 4 - 5.5 | SW8270C-SIM | PAH | Phenanthrene | **34 =** | 6.6 | 13 | 3.9 | µg/kg | X | Y |
| SO | BVBS1299 | BVBS1299S001 | N | 3 Mar 2015 | 4 - 5.5 | SW8270C-SIM | PAH | Pyrene | **140 J** | 6.6 | 13 | 5.6 | µg/kg | X | Y |
| SO | BVBS1299 | BVBS1299S001 | N | 3 Mar 2015 | 4 - 5.5 | SW9045D | GENCHEM | pH | 6.22 = | | | | pH units | | NC |
| SO | BVBS1299 | BVBS1299S002 | N | 3 Mar 2015 | 7 - 8 | SW8015B | HC | Diesel Range Organics (C12-C14) | **5800 =** | 2700 | 5400 | 5000 | µg/kg | X | Y |
| SO | BVBS1299 | BVBS1299S002 | N | 3 Mar 2015 | 7 - 8 | SW8015B | HC | Diesel Range Organics (C15-C20) | **20000 =** | 2700 | 5400 | 5000 | µg/kg | X | Y |
| SO | BVBS1299 | BVBS1299S002 | N | 3 Mar 2015 | 7 - 8 | SW8015B | HC | GRO (C4-C12) | **11000 =** | 490 | 990 | 1000 | µg/kg | X | Y |
| SO | BVBS1299 | BVBS1299S002 | N | 3 Mar 2015 | 7 - 8 | SW8015B | HC | TOTAL EFH(C8-C40) | **27000 =** | 2700 | 5400 | 10000 | µg/kg | X | Y |
| SO | BVBS1299 | BVBS1299S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | Methylene chloride | 2.1 J | 1.9 | 9.5 | 10 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S002 | N | 3 Mar 2015 | 7 - 8 | SW9045D | GENCHEM | pH | 8.22 = | | | | pH units | | NC |
| SO | BVBS1299 | BVBS1299S003 | N | 10 Apr 2015 | 4 - 5.5 | M8015D | HC | Diesel Range Organics (C12-C14) | **1500000=** | 2900 | 5800 | 5000 | µg/kg | X | Y |
| SO | BVBS1299 | BVBS1299S003 | N | 10 Apr 2015 | 4 - 5.5 | M8015D | HC | Diesel Range Organics (C15-C20) | **1400000=** | 2900 | 5800 | 5000 | µg/kg | X | Y |
| SO | BVBS1299 | BVBS1299S003 | N | 10 Apr 2015 | 4 - 5.5 | M8015D | HC | Diesel Range Organics (C21-C30) | **81000 =** | 2900 | 5800 | 5000 | µg/kg | X | Y |
| SO | BVBS1299 | BVBS1299S003 | N | 10 Apr 2015 | 4 - 5.5 | M8015D | HC | Diesel Range Organics (C8-C11) | **230000 =** | 2900 | 5800 | 1000 | µg/kg | X | Y |
| SO | BVBS1299 | BVBS1299S003 | N | 10 Apr 2015 | 4 - 5.5 | M8015D | HC | ORO (C31-C40) | **11000 J** | 5800 | 12000 | 10000 | µg/kg | X | Y |
| SO | BVBS1299 | BVBS1299S003 | N | 10 Apr 2015 | 4 - 5.5 | M8015D | HC | TOTAL EFH(C8-C40) | **3200000 =** | 2900 | 5800 | 10000 | µg/kg | X | Y |
| SO | BVBS1299 | BVBS1299S003 | N | 10 Apr 2015 | 4 - 5.5 | SW8015B | HC | GRO (C4-C12) | **390000 =** | 5500 | 11000 | 1000 | µg/kg | X | Y |
| SO | BVBS1299 | BVBS1299S003 | N | 10 Apr 2015 | 4 - 5.5 | SW8260B | VOC | Acetone | **21 J** | 5.2 | 21 | 20 | µg/kg | X | Y |
| SO | BVBS1299 | BVBS1299S003 | N | 10 Apr 2015 | 4 - 5.5 | SW8260B | VOC | n-Propylbenzene | 1.4 J | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S003 | N | 10 Apr 2015 | 4 - 5.5 | SW8260B | VOC | sec-Butylbenzene | **7 J** | 1 | 5.2 | 5 | µg/kg | X | Y |
| SO | BVBS1299 | BVBS1299S003 | N | 10 Apr 2015 | 4 - 5.5 | SW8270C-SIM | PAH | Anthracene | **10 J** | 5.8 | 12 | 2.5 | µg/kg | X | Y |
| SO | BVBS1299 | BVBS1299S003 | N | 10 Apr 2015 | 4 - 5.5 | SW8270C-SIM | PAH | Benzo(a)anthracene | 16 = | 5.8 | 12 | | µg/kg | | NC |
| SO | BVBS1299 | BVBS1299S003 | N | 10 Apr 2015 | 4 - 5.5 | SW8270C-SIM | PAH | Benzo(a)pyrene | 11 J | 5.8 | 12 | | µg/kg | | NC |
| SO | BVBS1299 | BVBS1299S003 | N | 10 Apr 2015 | 4 - 5.5 | SW8270C-SIM | PAH | Benzo(b)fluoranthene | 28 = | 5.8 | 12 | | µg/kg | | NC |
| SO | BVBS1299 | BVBS1299S003 | N | 10 Apr 2015 | 4 - 5.5 | SW8270C-SIM | PAH | Benzo(ghi)perylene | **37 =** | 5.8 | 12 | 2.5 | µg/kg | X | Y |
| SO | BVBS1299 | BVBS1299S003 | N | 10 Apr 2015 | 4 - 5.5 | SW8270C-SIM | PAH | Benzo(k)fluoranthene | 10 J | 5.8 | 12 | | µg/kg | | NC |
| SO | BVBS1299 | BVBS1299S003 | N | 10 Apr 2015 | 4 - 5.5 | SW8270C-SIM | PHTH | Bis(2-ethylhexyl)phthalate | **540 =** | 12 | 23 | 61 | µg/kg | X | Y |
| SO | BVBS1299 | BVBS1299S003 | N | 10 Apr 2015 | 4 - 5.5 | SW8270C-SIM | PAH | Chrysene | 12 = | 5.8 | 12 | | µg/kg | | NC |
| SO | BVBS1299 | BVBS1299S003 | N | 10 Apr 2015 | 4 - 5.5 | SW8270C-SIM | PAH | Fluoranthene | **66 =** | 5.8 | 12 | 5.2 | µg/kg | X | Y |
| SO | BVBS1299 | BVBS1299S003 | N | 10 Apr 2015 | 4 - 5.5 | SW8270C-SIM | PAH | Indeno(1,2,3-cd)pyrene | 23 = | 5.8 | 12 | | µg/kg | | NC |
| SO | BVBS1299 | BVBS1299S003 | N | 10 Apr 2015 | 4 - 5.5 | SW8270C-SIM | PAH | Naphthalene | **8.8 J** | 5.8 | 12 | 3.6 | µg/kg | X | Y |
| SO | BVBS1299 | BVBS1299S003 | N | 10 Apr 2015 | 4 - 5.5 | SW8270C-SIM | PAH | PAHTEQM | **18.82 =** | | | 4.47 | µg/kg | X | Y |
| SO | BVBS1299 | BVBS1299S003 | N | 10 Apr 2015 | 4 - 5.5 | SW8270C-SIM | PAH | Phenanthrene | **17 =** | 5.8 | 12 | 3.9 | µg/kg | X | Y |
| SO | BVBS1299 | BVBS1299S003 | N | 10 Apr 2015 | 4 - 5.5 | SW8270C-SIM | PAH | Pyrene | **83 =** | 5.8 | 12 | 5.6 | µg/kg | X | Y |
| SO | BVBS1299 | BVBS1299S003 | N | 10 Apr 2015 | 4 - 5.5 | SW9045D | GENCHEM | pH | 6.48 = | | | | pH units | | NC |
| SO | BVBS1299 | BVBS1299S004 | N | 10 Apr 2015 | 7 - 8 | SW9045D | GENCHEM | pH | 7.95 = | | | | pH units | | NC |
| SO | BVBS1015R | BVBS1015RS002 | N | 20 Nov 2014 | 4.5 - 5 | SW8015B | HC | Diesel Range Organics (C12-C14) | **6500000** | 29000 | 58000 | 5000 | µg/kg | | |
| SO | BVBS1015R | BVBS1015RS002 | N | 20 Nov 2014 | 4.5 - 5 | SW8015B | HC | Diesel Range Organics (C15-C20) | **410000=** | 29000 | 58000 | 5000 | µg/kg | | |
| SO | BVBS1015R | BVBS1015RS002 | N | 20 Nov 2014 | 4.5 - 5 | SW8015B | HC | Diesel Range Organics (C21-C30) | **120000 =** | 29000 | 58000 | 5000 | µg/kg | | |
| SO | BVBS1015R | BVBS1015RS002 | N | 20 Nov 2014 | 4.5 - 5 | SW8015B | HC | Diesel Range Organics (C8-C11) | **1800000** | 29000 | 58000 | 1000 | µg/kg | | |
| SO | BVBS1015R | BVBS1015RS002 | N | 20 Nov 2014 | 4.5 - 5 | SW8015B | HC | TOTAL EFH(C8-C40) | **12000000=** | 29000 | 58000 | 10000 | µg/kg | | |
| SO | BVBS1015R | BVBS1015RS003 | N | 20 Nov 2014 | 7.5 - 8 | SW8015B | HC | Diesel Range Organics (C12-C14) | **64000 =** | 2700 | 5400 | 5000 | µg/kg | | |
| SO | BVBS1015R | BVBS1015RS003 | N | 20 Nov 2014 | 7.5 - 8 | SW8015B | HC | Diesel Range Organics (C15-C20) | **90000 =** | 2700 | 5400 | 5000 | µg/kg | | |
| SO | BVBS1015R | BVBS1015RS003 | N | 20 Nov 2014 | 7.5 - 8 | SW8015B | HC | Diesel Range Organics (C21-C30) | 4600 J | 2700 | 5400 | 5000 | µg/kg | | |
| SO | BVBS1015R | BVBS1015RS003 | N | 20 Nov 2014 | 7.5 - 8 | SW8015B | HC | Diesel Range Organics (C8-C11) | **6800 =** | 2700 | 5400 | 1000 | µg/kg | | |

TABLE 9-3
**Detected Analytical Data 2015 Biovent Soil Sampling**
*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (feet) | Method | Class | Analyte | Final Result | MDL | RL | SL | Units | Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1015R | BVBS1015RS003 | N | 20 Nov 2014 | 7.5 - 8 | SW8015B | HC | ORO (C31-C40) | 5600 J | 5400 | 11000 | 10000 | µg/kg | | |
| SO | BVBS1015R | BVBS1015RS003 | N | 20 Nov 2014 | 7.5 - 8 | SW8015B | HC | TOTAL EFH(C8-C40) | **170000 =** | 2700 | 5400 | 10000 | µg/kg | | |

**Notes:**

FD = field duplicate sample
FS = field split sample
N = normal sample
NC = no criteria
pH = pH standard unit
GS = soil gas sample
SO = subsurface soil sample
µg/kg = microgram(s) per kilogram
µg/m$^3$ = microgram(s) per cubic meter
mg/kg = milligram(s) per kilogram

Results shown in **bold red** font were detected above the respective screening level.

**Class Abbreviations:**

GENCHEM general chemistry
HC hydrocarbon
PAH polycyclic aromatic hydrocarbon
PHTH phthalate
VOC volatile organic compound

**Validation Flags**

J Analyte is present but the reported quantitation is estimated.
= 

Air flow was measured at the BV manifold by means of a Pitot tube and a Dwyer gauge. Measurement frequency varied throughout the PS; pressure readings are summarized in Table 6.1-4. Over the duration of the PS, the average injection flow rate was approximately 21.3 standard cubic feet per minute (scfm), and approximately 826,281 cubic feet of air was injected over 645.1 hours of runtime. A timeline of soil and soil gas sampling events, operational start and end times, and air volume calculations is provided in Appendix E-4.

**Weather Conditions.** Precipitation events can substantially affect the operation of shallow bioventing systems. Rainfall of even 0.2 inch can moisten the surface soil to redirect injected air farther out in the flow field; more rainfall can lead to infiltration, which can change flow patterns and introduce new oxygen to the subsurface. These effects are typically more pronounced in shallow (less than 15 feet bgs) settings.

Records from the SSFL weather station indicate that four periods of recorded rain occurred during the test. A trace amount (0.1 inch) fell on February 6 and 7, 2015, the first weekend; 0.21 inch fell on February 22 and 23, 2015, in the middle of the second operational period; and 1.44 inches fell from March 1 to 3, 2015, during the shutoff period following the second operational period. On March 25, 2015, 1 day before termination of the test, 0.14 inch of rain fell.

**Soil Vapor Field Monitoring.** During bioventing operations, conditions at the shallow SVPs were measured daily, Monday through Friday. Because of insufficient flow during baseline soil gas sampling at two of the three deep SVPs, only one deep probe (SVP-6b) was available for pressure readings. Pressure differences at SVP-6b ranged from a maximum of 0.9 inch of water less than SVP-6a to 1.4 inches of water greater than SVP-6a. Generally, SVP-6b had pressure readings that were less than SVP-6a for the majority of the PS. Pressure also was monitored at the BV well, blower, and manifold. The frequency of these measurements varied throughout the PS for each monitoring point. Pressure data collected at each monitoring location are summarized in Table 9-4. Parameters collected at each SVP during bioventing operations, including oxygen concentration, pressure, and PID readings, are illustrated in time-series graphs provided in Appendix E-5.

#### 9.1.3.4 Oxygen Uptake Test

Between periods of blower operation, the previously delivered oxygen was available for enhanced biological activity. The rate at which the oxygen is used is proportional to the degradation rate of petroleum hydrocarbons. The rate of oxygen decay can be measured when the blower is not operating and thus not resupplying oxygen to the subsurface.

These tests work by turning the blower off and measuring the in situ oxygen concentrations over incremental time intervals. The bioventing operation increased oxygen levels from the initial baseline values at the three shallow SVPs, and a rapid initial response was observed (all SVPs increased to 20.4 or 20.5 percent oxygen by noon on the first day); the oxygen uptake test was initiated on Friday, February 13, 2015, and lasted approximately 3 days when normal continuous operations were resumed. The results of this oxygen uptake test, as well as parameters collected 1 day following the oxygen uptake test, are summarized in Appendix E-6.

TABLE 9-4

**Pressure and Flow Measurements**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Date | Time | Biovent Blower Flow (SCFM) | *Pressure (inches of $H_2O$)* | | | | | | | Comments and System Status |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Blower | Manifold | BV Well | SVP-5a | SVP-6a | SVP-6b (deep) | SVP-7a | |
| 2/6/2015 | 13:00 | 15.6 | 47 | 44 | - | 0.52 | 0.70 | - | 1.00 | System started at 12:59. |
| | 13:30 | 17.5 | 45 | 36.9 | - | 0.75 | 0.88 | - | 1.10 | |
| | 14:00 | 19.2 | 45 | 39 | - | 0.70 | 0.80 | - | 1.05 | |
| | 14:30 | 17.5 | 46 | 40 | - | 0.71 | 0.79 | - | 1.05 | |
| | 15:00 | 18.0 | 45 | 38 | - | 0.73 | 0.82 | - | 1.05 | |
| | 15:30 | 18.1 | 45 | 34.9 | - | 0.74 | 0.81 | - | 1.00 | |
| | 16:00 | 18.3 | 44 | 34.5 | - | 0.70 | 0.80 | - | 1.00 | |
| | 16:30 | 18.5 | 44 | 34.5 | - | 0.70 | 0.79 | - | 0.95 | System turned off at 17:30. |
| 2/9/2015 | 8:15 | 18.0 | 46 | 38 | - | 0.62 | 0.90 | - | 1.00 | System turned on at 8:00. |
| | 8:45 | 19.1 | 46 | 36 | - | 0.70 | 0.80 | - | 1.10 | |
| | 9:15 | 19.5 | 46 | 36 | - | 0.84 | 0.90 | - | 1.10 | Trace precipitation on February 7. |
| | 9:45 | 19.4 | 46 | 35 | - | 0.86 | 1.00 | - | 1.10 | |
| | 10:15 | 19.4 | 46 | 35 | - | 0.80 | 1.00 | - | 1.20 | |
| | 10:45 | 19.8 | 46 | 35 | - | 0.76 | 0.90 | - | 1.00 | |
| | 11:15 | 19.8 | 46 | 35 | - | 0.74 | 1.00 | - | 1.10 | |
| | 11:45 | 19.8 | 46 | 35 | - | 0.78 | 0.90 | - | 1.10 | |
| 2/10/2015 | 7:30 | 20.2 | 43 | 34 | 37 | - | - | - | - | |
| | 7:35 | - | - | - | - | 0.06 | - | - | - | |
| | 7:40 | - | - | - | - | - | 0.90 | - | - | |
| | 7:45 | - | - | - | - | - | - | - | 1.00 | |
| | 10:30 | 20.6 | 44 | 34 | 38 | - | - | - | - | |
| | 12:30 | - | - | - | - | 0.08 | - | - | - | |
| | 12:35 | - | - | - | - | - | 1.00 | - | - | |
| | 12:40 | - | - | - | - | - | - | - | 1.10 | |
| | 13:30 | 20.9 | 44 | 34 | 38 | - | - | - | - | |
| | 16:00 | - | - | - | - | 0.05 | - | - | - | |
| | 16:05 | - | - | - | - | - | 1.00 | - | - | |
| | 16:10 | - | - | - | - | - | - | - | 1.10 | |
| | 16:30 | 20.9 | 44 | 34 | 37 | - | - | - | - | |

TABLE 9-4

**Pressure and Flow Measurements**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Date | Time | Biovent Blower Flow (SCFM) | *Pressure (inches of $H_2O$)* | | | | | | | Comments and System Status |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Blower | Manifold | BV Well | SVP-5a | SVP-6a | SVP-6b (deep) | SVP-7a | |
| 2/11/2015 | 7:40 | 20.7 | 42 | 31 | 30 | - | - | - | - | |
| | 7:50 | - | - | - | - | 0.08 | - | - | - | |
| | 7:55 | - | - | - | - | - | 0.90 | 0.1 | - | |
| | 8:00 | - | - | - | - | - | - | - | 1.10 | |
| | 10:00 | 20.7 | 44 | 31 | 30 | - | - | - | - | |
| | 12:00 | - | - | - | - | 0.08 | - | - | - | |
| | 12:05 | - | - | - | - | - | 1.00 | 0.2 | - | |
| | 12:10 | - | - | - | - | - | - | - | 1.10 | |
| | 13:00 | 20.7 | 44 | 31 | 30 | - | - | - | - | |
| | 15:35 | - | - | - | - | - | 1.00 | 0.1 | - | |
| | 15:40 | - | - | - | - | - | - | - | 1.10 | |
| | 15:50 | - | - | - | - | 0.86 | - | - | - | |
| | 16:00 | 21.0 | 44 | 31 | 30 | - | - | - | - | |
| 2/12/2015 | 7:30 | 20.7 | 44 | 31 | 30 | - | - | - | - | |
| | 7:45 | - | - | - | - | 0.84 | - | - | - | |
| | 7:50 | - | - | - | - | - | 1.00 | 0.1 | - | |
| | 7:55 | - | - | - | - | - | - | - | 1.10 | |
| | 10:30 | 20.7 | 44 | 31 | 30 | - | - | - | - | |
| | 13:30 | 21.0 | 44 | 31 | 30 | 0.08 | - | - | - | |
| | 13:35 | - | - | - | - | - | 1.10 | 0.2 | - | |
| | 13:40 | - | - | - | - | - | - | - | 1.20 | |
| | 16:10 | - | - | - | - | 0.86 | - | - | - | |
| | 16:20 | - | - | - | - | - | 1.00 | 0.1 | - | |
| | 16:30 | 21.0 | 42 | 31 | 30 | - | - | - | 1.20 | System turned off 2/13/15 at 7:00 to begin the O2 uptake test. |
| 2/16/2015 | 7:30 | - | 10 | 34 | 35 | 0.60 | 0.80 | 0.00 | 0.90 | System turned on at 7:30 following the O2 Uptake Test. |
| | 8:00 | - | 44 | 33 | 35 | 0.66 | 0.90 | 0.00 | 0.90 | |
| | 8:30 | - | 44 | 33 | 35 | 0.66 | 0.90 | 0.10 | 1.10 | |
| | 9:00 | - | 44 | 33 | 35 | 0.70 | 0.90 | 0.10 | 1.00 | |
| | 9:30 | - | 44 | 33 | 35 | 0.72 | 0.90 | 0.10 | 1.10 | |
| | 10:00 | - | 44 | 34 | 35 | 0.72 | 1.00 | 0.10 | 1.00 | |
| | 10:30 | - | 44 | 34 | 35 | 0.74 | 1.00 | 0.10 | 1.10 | |
| | 11:00 | - | 44 | 33 | 35 | 0.74 | 1.00 | 0.10 | 1.00 | |
| | 11:30 | - | 44 | 34 | 35 | 0.76 | 1.00 | 0.10 | 1.10 | |

TABLE 9-4

**Pressure and Flow Measurements**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Date | Time | Biovent Blower Flow (SCFM) | *Pressure (inches of $H_2O$)* | | | | | | | Comments and System Status |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Blower | Manifold | BV Well | SVP-5a | SVP-6a | SVP-6b (deep) | SVP-7a | |
| | 12:00 | - | 44 | 34 | 35 | 0.76 | 1.00 | 0.10 | 1.10 | |
| | 12:30 | - | 44 | 32 | 35 | 0.78 | 1.00 | 0.30 | 1.00 | |
| 2/16/2015 | 13:00 | - | 44 | 33 | 35 | 0.79 | 1.00 | 0.10 | 1.10 | |
| (continued) | 13:30 | - | 44 | 32 | 35 | 0.79 | 1.00 | 0.10 | 1.00 | |
| | 14:00 | - | 44 | 32 | 35 | 0.80 | 1.00 | 0.10 | 1.10 | |
| 2/17/2015 | 7:45 | - | - | - | - | 0.08 | 0.08 | - | 0.01 | |
| | 12:00 | - | - | - | - | 0.08 | 0.90 | 0.10 | 0.10 | |
| 2/18/2015 | 14:45 | - | - | - | - | 0.09 | 0.02 | - | 1.10 | |
| 2/19/2015 | 14:14 | - | - | - | - | 0.10 | 1.00 | - | 0.03 | |
| 2/20/2015 | 7:40 | - | - | - | - | 0.10 | 0.01 | - | 0.01 | |
| | 12:00 | - | - | - | - | 0.66 | 1.00 | - | 1.00 | |
| | 15:30 | - | - | - | - | - | 1.00 | - | 1.00 | 0.4 inch precipitation February 22 and 23. |
| 2/23/2015 | 8:00 | - | - | - | - | 0.09 | 0.19 | 0.30 | 0.04 | |
| | 10:00 | - | 44 | 31 | 35 | - | - | - | - | |
| 2/24/2015 | 8:00 | - | 45 | 32 | 35 | 0.08 | 0.18 | 0.30 | 0.04 | |
| 2/25/2015 | 10:45 | - | 47 | 31 | 35 | 0.08 | 0.19 | 0.30 | 0.04 | |
| 2/26/2015 | 9:30 | - | 45 | 31 | 36 | 0.08 | 0.19 | 0.30 | 0.04 | |
| 2/27/2015 | 9:00 | - | 44 | 45 | 32 | 0.09 | 0.19 | - | 0.04 | |
| | 15:00 | - | 45 | 32 | 34 | 0.08 | 0.18 | - | 0.04 | System turned off at 15:10 - System off due to scheduled soil gas sampling on Tuesday morning (March 31, 2015). Due to rain and midpoint soil sampling, the soil gas sample was postponed and rescheduled to be collected on (March 31, 2015. |
| 3/6/2015 | 9:30 | - | - | - | - | - | - | - | - | System turned on at 9:30, following soil sampling and an unsuccessful attempt to collect soil gas samples |
| | 15:00 | - | 47 | 31 | 35 | 1.00 | 0.17 | - | 1.20 | System turned off at 15:10 1.0 inch precipitation February 28 to March 3. |
| 3/9/2015 | 10:00 | 24.9 | 44 | 37 | 30 | 0.09 | 0.13 | - | 1.20 | System turned on at 8:30. |
| 3/10/2015 | 9:00 | 24.9 | 47 | 37 | 30 | 0.08 | 0.15 | - | 1.20 | |
| 3/11/2015 | 15:00 | 24.7 | 47 | 35 | 30 | 0.09 | 0.17 | - | 0.08 | |
| 3/12/2015 | 13:00 | 25.0 | 45 | 33 | 33 | 0.08 | 0.18 | - | 0.07 | |
| 3/13/2015 | 9:45 | 24.8 | 48 | 33 | 34 | 0.08 | 0.19 | - | 0.05 | System turned off at 10:05. |
| 3/16/2015 | 13:30 | 24.2 | 47 | 31 | 32 | 0.08 | 0.18 | - | 0.10 | System turned on at 9:10. |
| 3/17/2015 | 11:15 | 24.4 | 47 | 32 | 32 | 0.09 | 0.19 | - | 0.07 | |
| 3/18/2015 | 10:00 | 25.6 | 47 | 35 | 33 | 0.15 | 0.20 | 1.60 | 0.05 | |

TABLE 9-4

**Pressure and Flow Measurements**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Date | Time | Biovent Blower Flow (SCFM) | *Pressure (inches of $H_2O$)* | | | | | | | Comments and System Status |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Blower | Manifold | BV Well | SVP-5a | SVP-6a | SVP-6b (deep) | SVP-7a | |
| 3/19/2015 | 11:30 | 24.8 | 47 | 34 | 34 | 0.10 | 0.15 | - | 0.04 | |
| 3/20/2015 | 10:30 | 25.6 | 45 | 35 | 32 | 0.09 | 0.18 | - | 0.09 | System turned off at 10:50. |
| 3/23/2015 | 13:35 | 24.9 | 47 | 32 | 30 | - | - | - | - | System turned on at 9:15. |
| | 13:40 | - | - | - | - | 0.12 | 1.20 | - | 1.10 | |
| 3/24/2015 | 11:15 | 25.0 | 47 | 34 | 32 | 0.10 | 0.18 | - | 1.00 | |
| 3/25/2015 | 14:15 | 25.6 | 47 | 35 | 32 | 0.10 | 1.00 | - | 1.00 | |
| 3/26/2015 | 10:00 | 25.6 | 47 | 34 | 32 | 0.10 | 1.00 | 0.40 | 1.00 | System terminated at 10:15, final soil and soil gas samples to follow. |
| ***Average*** | | 21.35 | 44.49 | 34.04 | 33.36 | 0.44 | 0.69 | 0.20 | 0.79 | |
| *Percent of Average* | | - | - | - | - | 1.31% | 2.08% | 0.61% | 2.38% | |
| | *Maximum* | 25.60 | - | - | - | 1.00 | 1.20 | 1.60 | 1.20 | |
| | *Minimum* | 15.60 | - | - | - | 0.05 | 0.01 | 0.00 | 0.01 | |
| Distance from BV (feet) | | - | - | - | - | 15 | 5 | 5 | 10 | |

Notes:
BV = bioventing
SCFM = standard cubic feet per minute
SVP = soil vapor probe

The complete set of oxygen readings for the entire test is presented in Table 9-5. These values provide insight on subsurface flow patterns and also on opportunistic uptake periods during later weekend shutdowns.

TABLE 9-5
**Oxygen Concentration Data Summary**
*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| | | Oxygen Concentration (%) | | | |
|---|---|---|---|---|---|
| **Date** | **Time** | **SVP-5a** | **SVP-6a** | **SVP-7a** | **Biovent** |
| 2/6/15 | 8:40 | 18.9 | - | - | - |
| 2/6/15 | 9:00 | - | - | 17.0 | - |
| 2/6/15 | 9:15 | - | - | - | 20.4 |
| 2/6/15 | 9:50 | - | 19.0 | - | - |
| 2/6/15 | 13:00 | - | - | - | - |
| 2/6/15 | 13:30 | 20.6 | 20.6 | 20.7 | - |
| 2/9/15 | 7:29 | - | - | 19.8 | - |
| 2/9/15 | 7:39 | 14.1 | - | - | - |
| 2/9/15 | 7:45 | - | 20.3 | - | - |
| 2/9/15 | 7:55 | - | - | - | 19.4 |
| 2/9/15 | 11:30 | 20.5 | 20.4 | 20.2 | - |
| 2/10/15 | 7:35 | 20.7 | - | - | - |
| 2/10/15 | 7:40 | - | 20.7 | - | - |
| 2/10/15 | 7:45 | - | - | 20.6 | - |
| 2/10/15 | 12:30 | 20.3 | - | - | - |
| 2/10/15 | 12:35 | - | 20.2 | - | - |
| 2/10/15 | 12:40 | - | - | 20.0 | - |
| 2/10/15 | 16:00 | 20.3 | - | - | - |
| 2/10/15 | 16:05 | - | 20.4 | - | - |
| 2/10/15 | 16:10 | - | - | 20.3 | - |
| 2/11/15 | 7:50 | 20.6 | - | - | - |
| 2/11/15 | 7:55 | - | 20.6 | - | - |
| 2/11/15 | 8:00 | - | - | 20.4 | - |
| 2/11/15 | 12:00 | 20.3 | - | - | - |
| 2/11/15 | 12:05 | - | 20.6 | - | - |
| 2/11/15 | 12:10 | - | - | 20.3 | - |
| 2/11/15 | 15:30 | 20.6 | - | - | - |
| 2/11/15 | 15:35 | - | 20.5 | - | - |
| 2/11/15 | 15:40 | - | - | 20.4 | - |
| 2/12/15 | 7:45 | 20.5 | - | - | - |
| 2/12/15 | 7:50 | - | 20.5 | - | - |
| 2/12/15 | 7:55 | - | - | 20.6 | - |
| 2/12/15 | 13:30 | 20.5 | - | - | - |
| 2/12/15 | 13:35 | - | 20.4 | - | - |
| 2/12/15 | 13:40 | - | - | 20.5 | - |
| 2/12/15 | 16:10 | 20.6 | - | - | - |
| 2/12/15 | 16:20 | - | 20.7 | - | - |
| 2/12/15 | 16:30 | - | - | 20.5 | - |
| 2/13/15 | 6:45 | 20.5 | 20.6 | 20.5 | 20.6 |
| 2/13/15 | 7:00 | 20.8 | 20.8 | 20.5 | 21.0 |

TABLE 9-5

**Oxygen Concentration Data Summary**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| | | Oxygen Concentration (%) | | | |
|---|---|---|---|---|---|
| **Date** | **Time** | **SVP-5a** | **SVP-6a** | **SVP-7a** | **Biovent** |
| 2/13/15 | 7:30 | 20.9 | 21.0 | 20.7 | 20.8 |
| 2/13/15 | 8:00 | 20.8 | 20.7 | 20.6 | 20.6 |
| 2/13/15 | 9:00 | 20.5 | 20.5 | 20.3 | 20.4 |
| 2/13/15 | 10:00 | 20.6 | 20.5 | 20.4 | 20.5 |
| 2/13/15 | 11:00 | 20.1 | 20.1 | 20.3 | 20.1 |
| 2/13/15 | 15:00 | 20.4 | 20.3 | 20.0 | 20.6 |
| 2/16/15 | 7:45 | 19.3 | 20.2 | 19.2 | - |
| 2/16/15 | 9:45 | 20.2 | 20.2 | 19.8 | - |
| 2/16/15 | 11:45 | 20.4 | 20.4 | 20.1 | - |
| 2/16/15 | 13:45 | 20.5 | 20.5 | 20.3 | - |
| 2/16/15 | 14:00 | 20.6 | 20.5 | 20.3 | - |
| 2/17/15 | 7:45 | 20.4 | 20.3 | 20.2 | - |
| 2/18/15 | 14:45 | 20.4 | 20.4 | 20.3 | - |
| 2/19/15 | 14:14 | 20.3 | 20.1 | 20.1 | - |
| 2/20/15 | 7:40 | 20.2 | 20.3 | 20.3 | - |
| 2/20/15 | 12:00 | 20.5 | 20.4 | 20.2 | - |
| 2/20/15 | 15:30 | 20.4 | 20.3 | 20.2 | - |
| 2/23/15 | 8:00 | 20.0 | 20.1 | 20.1 | - |
| 2/24/15 | 8:00 | 20.1 | 20.1 | 20.1 | - |
| 2/25/15 | 10:45 | 20.1 | 20.1 | 20.1 | - |
| 2/26/15 | 9:30 | 20.1 | 20.1 | 20.1 | - |
| 2/27/15 | 9:00 | 20.1 | 20.1 | 20.1 | - |
| 2/27/15 | 15:00 | 20.1 | 20.1 | 20.1 | - |
| 3/6/15 | 7:40 | 20.8 | 20.8 | 20.7 | - |
| 3/6/15 | 15:00 | 20.7 | 20.8 | 20.7 | - |
| 3/9/15 | 10:00 | 20.8 | 20.8 | 20.7 | - |
| 3/10/15 | 9:00 | 20.8 | 20.7 | 20.7 | - |
| 3/11/15 | 15:00 | 20.8 | 20.8 | 20.8 | - |
| 3/12/15 | 13:00 | 20.8 | 20.8 | 20.8 | - |
| 3/13/15 | 9:45 | 20.8 | 20.8 | 20.8 | - |
| 3/16/15 | 9:00 | 20.8 | 20.8 | 20.6 | - |
| 3/16/15 | 13:30 | 20.7 | 20.7 | 20.7 | - |
| 3/17/15 | 11:15 | 20.8 | 20.8 | 20.7 | - |
| 3/18/15 | 10:00 | 20.7 | 20.7 | 20.7 | - |
| 3/19/15 | 11:30 | 20.7 | 20.7 | 20.7 | - |
| 3/20/15 | 10:30 | 20.7 | 20.7 | 20.7 | - |
| 3/23/15 | 9:00 | 19.6 | 20.6 | 20.5 | - |
| 3/23/15 | 13:40 | 20.6 | 20.6 | 20.5 | - |
| 3/24/15 | 11:15 | 20.7 | 20.7 | 20.7 | - |
| 3/25/15 | 14:15 | 20.7 | 20.7 | 20.7 | - |
| 3/26/15 | 10:00 | 20.7 | 20.7 | 20.7 | - |

Notes:
SVP = soil vapor probe

#### 9.1.3.5 System Shutdown and Demobilization

Following the completion of air injections on March 26, 2015, the blower and manifold were disconnected and removed from the PS area. The final soil and soil gas sampling event at the Bravo Skim Pond was completed, and the site was prepared for the ISCO phase of this PS.

### 9.1.4 Environmentally Sensitive Area Action Plan and Biological Surveys

Prior to the disturbance of site soil, the Environmentally Sensitive Area Action Plan (ESAAP) requires a Native American monitor to be onsite and present at all times while soil is disturbed. The ESAAP process is designed to avoid potentially disturbing an archaeological site. The bioventing pilot test area was determined to be outside ESAAP areas based on a survey conducted in July 2015. The Cultural Resource Compliance technical memorandum (Appendix F) documents ESAAP compliance for this project.

Plant and wildlife surveys were also conducted prior to soil disturbance. The biological surveys conducted for this project did not identify any concerns and were documented in the technical memoranda in Appendix F.

### 9.1.5 Deviations from Work Plan

Unexpected challenges and conditions were encountered in the field during and after installation of the bioventing system that caused deviations to the approved work plan (NASA, 2014b). These deviations are summarized in Table 9-6.

TABLE 9-6
**Bravo Skim Pond - Bioventing/ISCO Treatability Study: Deviations to the Bioventing Pilot Study**
*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Issue | Deviation | Resolution |
|---|---|---|
| Repeated shallow refusal during well/probe installations. | Change made to the original plan and layout of the PS area. | These findings were discussed in a meeting with CH2M HILL, NASA, and the DTSC on July 15, 2014, to determine a plan to move forward. |
| TPH no longer present in subsurface soil. | ISCO no longer warranted. | An alternative location was identified in the Bravo Skim Pond area to pilot test the combined bioventing/ISCO treatment process as described in the work plan addendum NASA (2014d). |
| Shallow refusal during probe installations. | Relocation of SVP-7 | An alternative location for SVP-7 was selected approximately 10 feet east-northeast of the BV well where a total depth of 8 feet was achieved. |
| Insufficient flow observed at two deep SVPs. | Soil gas sampling not possible at two of the three deep SVPs (SVP-5b [south of the BV well] and SVP-7b [east of the BV well]). | No possible resolution for this issue. |
| Insufficient flow observed during midpoint sampling. | A soil gas sample was not collected during the midpoint sampling event. | No possible resolution for this issue. |

Notes:
DTSC = State of California Department of Toxic Substances Control
ISCO = in situ chemical oxidation
PS = pilot study
SVP = soil vapor probe
TPH = total petroleum hydrocarbons

# 9.2 ISCO Implementation

## 9.2.1 ISCO Operations Summary

From July 14 through July 20, 2015, an approximately 100 square-foot ISCO infiltration area was prepared for application of the ISCO solution (Figures 9-1 and 9-2). Activities included the installation of spill guards; the delivery of the ISCO chemicals (sodium persulfate and sodium hydroxide), water, and a mixing tank to the site; preparation of the soil surface; and creation of a soil berm around the infiltration area to contain the ISCO solution. A pump and piping system was installed, which included 10 irrigation drip lines spaced approximately 1 foot apart across the infiltration area.

To prepare the 10-foot by 10-foot infiltration area, the surface soil was grubbed and scarified to provide a uniform and level bare soil surface. The irrigation drip lines were constructed of 10-foot sections of 5/8-inch-diameter HDPE piping to form the infiltration network. These drip lines were connected to a main delivery pipe running perpendicular to each drip line, which was placed and staked in place within the ISCO infiltration area. Pressure compensating drip emitters (2 gallons per hour flow rate) were installed along each infiltration line at 10-inch intervals to provide a maximum infiltration rate of 4 gallons per minute (gpm). The main delivery pipe connected to each infiltration drip line was connected to a 3/4-inch threaded HDPE header pipe equipped with a pressure gauge and shutoff valve, and the header pipe was connected to the main ISCO delivery line from the mixing tank. Prior to the application of the ISCO solution, the monitoring equipment was calibrated as described in the project work plan (NASA, 2014b) and work plan addendum (NASA, 2014d).

The ISCO solution was injected on July 21 and 22, 2015. The ISCO solution consisted of 1,102 pounds of sodium persulfate (dry weight, 20 bags), 1,680 pounds of sodium hydroxide (three 55-gallon drums of 25 percent by weight solution), and approximately 1,400 gallons of potable water. Approximately 1,500 gallons of ISCO solution was applied during two active infiltration periods: 6 hours, 43 minutes on July 21, 2015, and 6 hours, 37 minutes on July 22, 2015.

The application rate was controlled to prevent the wetted ground surface from extending beyond the infiltration area, and application was halted once during each day of infiltration for periods of 55 and 25 minutes, respectively, to allow ponded solution to infiltrate. Active application rates ranged from 0.1 to 3.0 gpm, with a time-weighted average of 2.0 gpm.

Before, during, and after ISCO infiltration, all SVPs were inspected for accumulation of the ISCO solution and/or groundwater. No fluid was observed in the SVP-5, SVP-6, and SVP-7 pairs or in SVP-8b. In the shallower SVP-8a (located in the approximate center of the infiltration area) fluid was observed at a depth of 5.1 feet approximately 3.5 hours after infiltration began on July 21, 2015. The SVP was bailed dry to collect a sample, and no fluid was observed for the remainder of the day. Fluid again was observed in SVP-8a the following day on July 22, 2015 (prior to infiltration), throughout the day, and the following morning on July 23, 2015, at depths ranging from 2.55 to 5.32 feet. Oxidation-reduction potential values ranged from 182.5 to 240.6 millivolts (mV), pH values ranged from 8.75 to 13.06 standard units, and persulfate concentrations ranged from 15.9 to 48.2 grams per liter (g/L). These field parameters are consistent with expected results for the ISCO solution in site soil.

Fluid was first observed in the BV well on July 22, 2015, approximately 2 hours after ISCO infiltration was completed, at a depth of 5.36 feet, and again the following morning on July 23, 2015, at a depth of 8.02 feet. Oxidation-reduction potential readings ranged from 272 to 724 mV, pH values were 6.43 and 6.61 standard units, and persulfate concentrations were 12.88 and 11.39 g/L.

## 9.2.2 Post-ISCO Soil Sampling

On August 18, 2015, approximately 4 weeks following ISCO infiltration, soil samples were collected at five sampling locations within the ISCO infiltration area: BVBS1294, BVBS1295, BVBS1297, BVBS1298, and BVBS1299 (Figure 9-2). Soil sample depth intervals at each station are summarized in Table 9-2.

Post-ISCO soil samples were collected using a Geoprobe DPT drill rig and were analyzed for the following parameters:

- VOCs (EPA Method SW8260B)
- PAHs (EPA Method SW8270C-SIM)

- TPH (EPA Method SW8015E and SW8015P)

A total of 13 soil samples were collected, consisting of 10 normal samples, 1 field duplicate, 1 split sample, and 1 MS/MSD sample. The soil sampling analysis results for detected constituents are summarized in Table 9-7, and the results for all analyses are summarized in Appendix G-1.

TABLE 9-7

**Detected Constituents - August 2015 Post-ISCO Soil Sampling**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (feet) | Method | Class | Analyte | Final Result | MDL | RL | FSP SL | Units | FSP Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1294 | BVBS1294S007 | N | 8/18/2015 | 2 - 4 | SW8015B | HC | Diesel Range Organics (C12-C14) | 9200 = | 2900 | 5900 | 5000 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S007 | N | 8/18/2015 | 2 - 4 | SW8015B | HC | Diesel Range Organics (C15-C20) | 8700 = | 2900 | 5900 | 5000 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S007 | N | 8/18/2015 | 2 - 4 | SW8015B | HC | GRO (C4-C12) | 70000 J | 510 | 1000 | 1000 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S007 | N | 8/18/2015 | 2 - 4 | SW8015B | HC | TOTAL EFH (C8-C40) | 23000 = | 2900 | 5900 | 10000 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S007 | N | 8/18/2015 | 2 - 4 | SW8270C-SIM | PAH | Benzo(a)pyrene | 7.7 J | 5.9 | 12 | NC | µg/kg | | NC |
| SO | BVBS1294 | BVBS1294S007 | N | 8/18/2015 | 2 - 4 | SW8270C-SIM | PAH | Benzo(ghi)perylene | 7.5 J | 5.9 | 12 | 2.5 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S007 | N | 8/18/2015 | 2 - 4 | SW8270C-SIM | PAH | Fluoranthene | 15 = | 5.9 | 12 | 5.2 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S007 | N | 8/18/2015 | 2 - 4 | SW8270C-SIM | PAH | PAHTEQM | 7.7 = | | | 4.47 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S007 | N | 8/18/2015 | 2 - 4 | SW8270C-SIM | PAH | Pyrene | 16 = | 5.9 | 12 | 5.6 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S007 | N | 8/18/2015 | 2 - 4 | SW8270C-SIM | PHTH | Bis(2-ethylhexyl)phthalate | 130 = | 12 | 24 | 61 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S007 | N | 8/18/2015 | 2 - 4 | SW8260B | VOC | Acetone | 11 J | 5.6 | 22 | 20 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D007 | FD | 8/18/2015 | 2 - 4 | SW8015B | HC | Diesel Range Organics (C12-C14) | 11000 = | 2900 | 5800 | 5000 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294D007 | FD | 8/18/2015 | 2 - 4 | SW8015B | HC | Diesel Range Organics (C15-C20) | 13000 = | 2900 | 5800 | 5000 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294D007 | FD | 8/18/2015 | 2 - 4 | SW8015B | HC | TOTAL EFH(C8-C40) | 29000 = | 2900 | 5800 | 10000 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294D007 | FD | 8/18/2015 | 2 - 4 | SW8270C-SIM | PAH | Benzo(ghi)perylene | 6 J | 5.8 | 12 | 2.5 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294D007 | FD | 8/18/2015 | 2 - 4 | SW8270C-SIM | PAH | Fluoranthene | 14 = | 5.8 | 12 | 5.2 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294D007 | FD | 8/18/2015 | 2 - 4 | SW8270C-SIM | PAH | Pyrene | 17 = | 5.8 | 12 | 5.6 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294D007 | FD | 8/18/2015 | 2 - 4 | SW8270C-SIM | PHTH | Bis(2-ethylhexyl)phthalate | 97 = | 12 | 23 | 61 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294D007 | FD | 8/18/2015 | 2 - 4 | SW8260B | VOC | Acetone | 16 J | 4.9 | 20 | 20 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D007 | FD | 8/18/2015 | 2 - 4 | SW8260B | VOC | Benzene | 2.1 J | 0.99 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S008 | N | 8/18/2015 | 6 - 7 | SW8015B | HC | Diesel Range Organics (C12-C14) | 7600000 = | 58000 | 120000 | 5000 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S008 | N | 8/18/2015 | 6 - 7 | SW8015B | HC | Diesel Range Organics (C15-C20) | 1600000 = | 58000 | 120000 | 5000 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S008 | N | 8/18/2015 | 6 - 7 | SW8015B | HC | Diesel Range Organics (C8-C11) | 1600000 = | 58000 | 120000 | 1000 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S008 | N | 8/18/2015 | 6 - 7 | SW8015B | HC | GRO (C4-C12) | 1900000 = | 11000 | 21000 | 1000 | µg/kg | X | Y |

TABLE 9-7

**Detected Constituents - August 2015 Post-ISCO Soil Sampling**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (feet) | Method | Class | Analyte | Final Result | MDL | RL | FSP SL | Units | FSP Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1294 | BVBS1294S008 | N | 8/18/2015 | 6 - 7 | SW8015B | HC | TOTAL EFH(C8-C40) | **11000000 =** | 58000 | 120000 | 10000 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S008 | N | 8/18/2015 | 6 - 7 | SW8270C-SIM | PAH | Anthracene | **63 =** | 5.8 | 12 | 2.5 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S008 | N | 8/18/2015 | 6 - 7 | SW8270C-SIM | PAH | Benzo(a)anthracene | 45 = | 5.8 | 12 | NC | µg/kg | | NC |
| SO | BVBS1294 | BVBS1294S008 | N | 8/18/2015 | 6 - 7 | SW8270C-SIM | PAH | Benzo(a)pyrene | 59 = | 5.8 | 12 | NC | µg/kg | | NC |
| SO | BVBS1294 | BVBS1294S008 | N | 8/18/2015 | 6 - 7 | SW8270C-SIM | PAH | Benzo(b)fluoranthene | 66 = | 5.8 | 12 | NC | µg/kg | | NC |
| SO | BVBS1294 | BVBS1294S008 | N | 8/18/2015 | 6 - 7 | SW8270C-SIM | PAH | Benzo(ghi)perylene | **78 =** | 5.8 | 12 | 2.5 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S008 | N | 8/18/2015 | 6 - 7 | SW8270C-SIM | PAH | Benzo(k)fluoranthene | 12 = | 5.8 | 12 | NC | µg/kg | | NC |
| SO | BVBS1294 | BVBS1294S008 | N | 8/18/2015 | 6 - 7 | SW8270C-SIM | PAH | Chrysene | 41 = | 5.8 | 12 | NC | µg/kg | | NC |
| SO | BVBS1294 | BVBS1294S008 | N | 8/18/2015 | 6 - 7 | SW8270C-SIM | PAH | Fluoranthene | **290 =** | 5.8 | 12 | 5.2 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S008 | N | 8/18/2015 | 6 - 7 | SW8270C-SIM | PAH | Fluorene | **110 =** | 5.8 | 12 | 3.8 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S008 | N | 8/18/2015 | 6 - 7 | SW8270C-SIM | PAH | Indeno(1,2,3-cd)pyrene | 37 = | 5.8 | 12 | NC | µg/kg | | NC |
| SO | BVBS1294 | BVBS1294S008 | N | 8/18/2015 | 6 - 7 | SW8270C-SIM | PAH | Naphthalene | **140 =** | 5.8 | 12 | 3.6 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S008 | N | 8/18/2015 | 6 - 7 | SW8270C-SIM | PAH | PAHTEQM | **75.41 =** | | | 4.47 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S008 | N | 8/18/2015 | 6 - 7 | SW8270C-SIM | PAH | Phenanthrene | **230 =** | 5.8 | 12 | 3.9 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S008 | N | 8/18/2015 | 6 - 7 | SW8270C-SIM | PAH | Pyrene | **410 =** | 5.8 | 12 | 5.6 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S008 | N | 8/18/2015 | 6 - 7 | SW8270C-SIM | PHTH | Bis(2-ethylhexyl)phthalate | **1300 =** | 12 | 23 | 61 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S008 | N | 8/18/2015 | 6 - 7 | SW8260B | VOC | 1,3,5-Trimethylbenzene | 4.4 J | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S008 | N | 8/18/2015 | 6 - 7 | SW8260B | VOC | 2-Butanone (MEK) | 8.6 J | 5.5 | 22 | 20 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S008 | N | 8/18/2015 | 6 - 7 | SW8260B | VOC | Acetone | **47 J** | 5.5 | 22 | 20 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S008 | N | 8/18/2015 | 6 - 7 | SW8260B | VOC | Ethylbenzene | **7.5 J** | 1.1 | 5.5 | 5 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S008 | N | 8/18/2015 | 6 - 7 | SW8260B | VOC | Isopropylbenzene | **8.3 J** | 1.1 | 5.5 | 5 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S008 | N | 8/18/2015 | 6 - 7 | SW8260B | VOC | m,p-Xylenes | 2.3 J | 2.2 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S008 | N | 8/18/2015 | 6 - 7 | SW8260B | VOC | n-butylbenzene | **5.4 J** | 1.1 | 5.5 | 5 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S008 | N | 8/18/2015 | 6 - 7 | SW8260B | VOC | n-Propylbenzene | **20 J** | 1.1 | 5.5 | 5 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S008 | N | 8/18/2015 | 6 - 7 | SW8260B | VOC | o-Xylene | 4.2 J | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S008 | N | 8/18/2015 | 6 - 7 | SW8260B | VOC | p-Isopropyltoluene | 2.6 J | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S008 | N | 8/18/2015 | 6 - 7 | SW8260B | VOC | sec-Butylbenzene | **21 J** | 1.1 | 5.5 | 5 | µg/kg | X | Y |

TABLE 9-7

**Detected Constituents - August 2015 Post-ISCO Soil Sampling**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (feet) | Method | Class | Analyte | Final Result | MDL | RL | FSP SL | Units | FSP Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1294 | BVBS1294S008 | N | 8/18/2015 | 6 - 7 | SW8260B | VOC | tert-Butylbenzene | 1.8 J | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S007 | N | 8/18/2015 | 2.5 - 4 | SW8015B | HC | TOTAL EFH(C8-C40) | 7400 = | 2700 | 5500 | 10000 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S007 | N | 8/18/2015 | 2.5 - 4 | SW8260B | VOC | Acetone | 13 J | 4.8 | 19 | 20 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S007SP | FS | 8/18/2015 | 2.5 - 4 | SW8015B | HC | Diesel Range Organics (C15-C20) | 2200 J | 1400 | 5500 | 5000 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S007SP | FS | 8/18/2015 | 2.5 - 4 | SW8270C-SIM | PAH | Benzo(ghi)perylene | **9.3 J** | 5.3 | 11 | 2.5 | µg/kg | X | Y |
| SO | BVBS1295 | BVBS1295S007SP | FS | 8/18/2015 | 2.5 - 4 | SW8270C-SIM | PAH | Indeno(1,2,3-cd)pyrene | 9.5 J | 6.9 | 11 | NC | µg/kg | | NC |
| SO | BVBS1295 | BVBS1295S007SP | FS | 8/18/2015 | 2.5 - 4 | SW8270C-SIM | PAH | PAHTEQM | 0.95 = | | | 4.47 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S007SP | FS | 8/18/2015 | 2.5 - 4 | SW8270C-SIM | PHTH | Bis(2-ethylhexyl)phthalate | 21 J | 6 | 11 | 61 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S007SP | FS | 8/18/2015 | 2.5 - 4 | SW8270C-SIM | PHTH | Dimethyl phthalate | **220 =** | 4.1 | 11 | 27 | µg/kg | X | Y |
| SO | BVBS1295 | BVBS1295S007SP | FS | 8/18/2015 | 2.5 - 4 | SW8260B | VOC | Benzene | 0.34 J | 0.13 | 0.51 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S008 | N | 8/18/2015 | 5.5 - 8 | SW8015B | HC | Diesel Range Organics (C12-C14) | **120000 =** | 2700 | 5500 | 5000 | µg/kg | X | Y |
| SO | BVBS1295 | BVBS1295S008 | N | 8/18/2015 | 5.5 - 8 | SW8015B | HC | Diesel Range Organics (C15-C20) | **29000 =** | 2700 | 5500 | 5000 | µg/kg | X | Y |
| SO | BVBS1295 | BVBS1295S008 | N | 8/18/2015 | 5.5 - 8 | SW8015B | HC | GRO (C4-C12) | **14000 =** | 480 | 950 | 1000 | µg/kg | X | Y |
| SO | BVBS1295 | BVBS1295S008 | N | 8/18/2015 | 5.5 - 8 | SW8015B | HC | TOTAL EFH(C8-C40) | **160000 =** | 2700 | 5500 | 10000 | µg/kg | X | Y |
| SO | BVBS1295 | BVBS1295S008 | N | 8/18/2015 | 5.5 - 8 | SW8270C-SIM | PAH | Pyrene | **6.1 J** | 5.5 | 11 | 5.6 | µg/kg | X | Y |
| SO | BVBS1295 | BVBS1295S008 | N | 8/18/2015 | 5.5 - 8 | SW8270C-SIM | PHTH | Bis(2-ethylhexyl)phthalate | **78 =** | 11 | 22 | 61 | µg/kg | X | Y |
| SO | BVBS1295 | BVBS1295S008 | N | 8/18/2015 | 5.5 - 8 | SW8260B | VOC | Acetone | 17 J | 4.8 | 19 | 20 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S005 | N | 8/18/2015 | 4 - 5 | SW8015B | HC | Diesel Range Organics (C12-C14) | **260000 =** | 2700 | 5300 | 5000 | µg/kg | X | Y |
| SO | BVBS1297 | BVBS1297S005 | N | 8/18/2015 | 4 - 5 | SW8015B | HC | Diesel Range Organics (C15-C20) | **61000 =** | 2700 | 5300 | 5000 | µg/kg | X | Y |
| SO | BVBS1297 | BVBS1297S005 | N | 8/18/2015 | 4 - 5 | SW8015B | HC | Diesel Range Organics (C21-C30) | **11000 =** | 2700 | 5300 | 5000 | µg/kg | X | Y |
| SO | BVBS1297 | BVBS1297S005 | N | 8/18/2015 | 4 - 5 | SW8015B | HC | GRO (C4-C12) | **1500 =** | 520 | 1000 | 1000 | µg/kg | X | Y |
| SO | BVBS1297 | BVBS1297S005 | N | 8/18/2015 | 4 - 5 | SW8015B | HC | ORO (C31-C40) | 7800 J | 5300 | 11000 | 10000 | µg/kg | | N |

TABLE 9-7

**Detected Constituents - August 2015 Post-ISCO Soil Sampling**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (feet) | Method | Class | Analyte | Final Result | MDL | RL | FSP SL | Units | FSP Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1297 | BVBS1297S005 | N | 8/18/2015 | 4 - 5 | SW8015B | HC | TOTAL EFH(C8-C40) | **370000 =** | 2700 | 5300 | 10000 | µg/kg | X | Y |
| SO | BVBS1297 | BVBS1297S005 | N | 8/18/2015 | 4 - 5 | SW8260B | VOC | 2-Butanone (MEK) | 12 J | 4.9 | 20 | 20 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S005 | N | 8/18/2015 | 4 - 5 | SW8260B | VOC | Acetone | **120 =** | 4.9 | 20 | 20 | µg/kg | X | Y |
| SO | BVBS1297 | BVBS1297S006 | N | 8/18/2015 | 7 - 8 | SW8260B | VOC | Acetone | **21.5 J** | 5.6 | 22 | 20 | µg/kg | X | Y |
| SO | BVBS1298 | BVBS1298S005 | N | 8/18/2015 | 4 - 5 | SW8015B | HC | Diesel Range Organics (C12-C14) | **8900000 =** | 62000 | 120000 | 5000 | µg/kg | X | Y |
| SO | BVBS1298 | BVBS1298S005 | N | 8/18/2015 | 4 - 5 | SW8015B | HC | Diesel Range Organics (C15-C20) | **1900000 =** | 62000 | 120000 | 5000 | µg/kg | X | Y |
| SO | BVBS1298 | BVBS1298S005 | N | 8/18/2015 | 4 - 5 | SW8015B | HC | Diesel Range Organics (C8-C11) | **1900000 =** | 62000 | 120000 | 1000 | µg/kg | X | Y |
| SO | BVBS1298 | BVBS1298S005 | N | 8/18/2015 | 4 - 5 | SW8015B | HC | GRO (C4-C12) | **10000 J** | 490 | 980 | 1000 | µg/kg | X | Y |
| SO | BVBS1298 | BVBS1298S005 | N | 8/18/2015 | 4 - 5 | SW8015B | HC | TOTAL EFH(C8-C40) | **13000000=** | 62000 | 120000 | 10000 | µg/kg | X | Y |
| SO | BVBS1298 | BVBS1298S005 | N | 8/18/2015 | 4 - 5 | SW8270C-SIM | PAH | Anthracene | **99 =** | 6.2 | 12 | 2.5 | µg/kg | X | Y |
| SO | BVBS1298 | BVBS1298S005 | N | 8/18/2015 | 4 - 5 | SW8270C-SIM | PAH | Benzo(a)anthracene | 57 = | 6.2 | 12 | NC | µg/kg | | NC |
| SO | BVBS1298 | BVBS1298S005 | N | 8/18/2015 | 4 - 5 | SW8270C-SIM | PAH | Benzo(a)pyrene | 75 = | 6.2 | 12 | NC | µg/kg | | NC |
| SO | BVBS1298 | BVBS1298S005 | N | 8/18/2015 | 4 - 5 | SW8270C-SIM | PAH | Benzo(b)fluoranthene | 83 = | 6.2 | 12 | NC | µg/kg | | NC |
| SO | BVBS1298 | BVBS1298S005 | N | 8/18/2015 | 4 - 5 | SW8270C-SIM | PAH | Benzo(ghi)perylene | **100 =** | 6.2 | 12 | 2.5 | µg/kg | X | Y |
| SO | BVBS1298 | BVBS1298S005 | N | 8/18/2015 | 4 - 5 | SW8270C-SIM | PAH | Benzo(k)fluoranthene | 22 = | 6.2 | 12 | NC | µg/kg | | NC |
| SO | BVBS1298 | BVBS1298S005 | N | 8/18/2015 | 4 - 5 | SW8270C-SIM | PAH | Chrysene | 59 = | 6.2 | 12 | NC | µg/kg | | NC |
| SO | BVBS1298 | BVBS1298S005 | N | 8/18/2015 | 4 - 5 | SW8270C-SIM | PAH | Fluoranthene | **400 =** | 6.2 | 12 | 5.2 | µg/kg | X | Y |
| SO | BVBS1298 | BVBS1298S005 | N | 8/18/2015 | 4 - 5 | SW8270C-SIM | PAH | Fluorene | **170 =** | 6.2 | 12 | 3.8 | µg/kg | X | Y |
| SO | BVBS1298 | BVBS1298S005 | N | 8/18/2015 | 4 - 5 | SW8270C-SIM | PAH | Indeno(1,2,3-cd)pyrene | 49 = | 6.2 | 12 | NC | µg/kg | | NC |
| SO | BVBS1298 | BVBS1298S005 | N | 8/18/2015 | 4 - 5 | SW8270C-SIM | PAH | PAHTEQM | **96.69 =** | | | 4.47 | µg/kg | X | Y |
| SO | BVBS1298 | BVBS1298S005 | N | 8/18/2015 | 4 - 5 | SW8270C-SIM | PAH | Phenanthrene | **150 =** | 6.2 | 12 | 3.9 | µg/kg | X | Y |
| SO | BVBS1298 | BVBS1298S005 | N | 8/18/2015 | 4 - 5 | SW8270C-SIM | PAH | Pyrene | **570 =** | 6.2 | 12 | 5.6 | µg/kg | X | Y |
| SO | BVBS1298 | BVBS1298S005 | N | 8/18/2015 | 4 - 5 | SW8270C-SIM | PHTH | Bis(2-ethylhexyl)phthalate | **1900 =** | 12 | 25 | 61 | µg/kg | X | Y |
| SO | BVBS1298 | BVBS1298S005 | N | 8/18/2015 | 4 - 5 | SW8270C-SIM | PHTH | Di-n-octyl phthalate | **68 =** | 12 | 25 | 27 | µg/kg | X | Y |
| SO | BVBS1298 | BVBS1298S005 | N | 8/18/2015 | 4 - 5 | SW8260B | VOC | 2-Butanone (MEK) | 6.6 J | 5.5 | 22 | 20 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S005 | N | 8/18/2015 | 4 - 5 | SW8260B | VOC | Acetone | **36 J** | 5.5 | 22 | 20 | µg/kg | X | Y |

TABLE 9-7

**Detected Constituents - August 2015 Post-ISCO Soil Sampling**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (feet) | Method | Class | Analyte | Final Result | MDL | RL | FSP SL | Units | FSP Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1298 | BVBS1298S005 | N | 8/18/2015 | 4 - 5 | SW8260B | VOC | Isopropylbenzene | **11 J** | 1.1 | 5.5 | 5 | µg/kg | X | Y |
| SO | BVBS1298 | BVBS1298S005 | N | 8/18/2015 | 4 - 5 | SW8260B | VOC | m,p-Xylenes | **21 J** | 2.2 | 5.5 | 5 | µg/kg | X | Y |
| SO | BVBS1298 | BVBS1298S005 | N | 8/18/2015 | 4 - 5 | SW8260B | VOC | n-Propylbenzene | **16 J** | 1.1 | 5.5 | 5 | µg/kg | X | Y |
| SO | BVBS1298 | BVBS1298S005 | N | 8/18/2015 | 4 - 5 | SW8260B | VOC | sec-Butylbenzene | **26 J** | 1.1 | 5.5 | 5 | µg/kg | X | Y |
| SO | BVBS1298 | BVBS1298S005 | N | 8/18/2015 | 4 - 5 | SW8260B | VOC | tert-Butylbenzene | 2.6 J | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S005 | N | 8/18/2015 | 4 - 5 | SW8260B | VOC | Toluene | 1.9 J | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S006 | N | 8/18/2015 | 6 - 8 | SW8015B | HC | Diesel Range Organics (C12-C14) | **5700 =** | 2700 | 5400 | 5000 | µg/kg | X | Y |
| SO | BVBS1298 | BVBS1298S006 | N | 8/18/2015 | 6 - 8 | SW8015B | HC | GRO (C4-C12) | **4500 =** | 450 | 910 | 1000 | µg/kg | X | Y |
| SO | BVBS1298 | BVBS1298S006 | N | 8/18/2015 | 6 - 8 | SW8015B | HC | TOTAL EFH(C8-C40) | **15000 =** | 2700 | 5400 | 10000 | µg/kg | X | Y |
| SO | BVBS1298 | BVBS1298S006 | N | 8/18/2015 | 6 - 8 | SW8270C-SIM | PHTH | Bis(2-ethylhexyl)phthalate | 48 = | 11 | 22 | 61 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S006 | N | 8/18/2015 | 6 - 8 | SW8260B | VOC | 2-Butanone (MEK) | 7 J | 4.6 | 19 | 20 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S006 | N | 8/18/2015 | 6 - 8 | SW8260B | VOC | Acetone | **36 =** | 4.6 | 19 | 20 | µg/kg | X | Y |
| SO | BVBS1299 | BVBS1299S005 | N | 8/18/2015 | 4 - 5.5 | SW8015B | HC | Diesel Range Organics (C12-C14) | **6300000 =** | 59000 | 120000 | 5000 | µg/kg | X | Y |
| SO | BVBS1299 | BVBS1299S005 | N | 8/18/2015 | 4 - 5.5 | SW8015B | HC | Diesel Range Organics (C15-C20) | **1300000 =** | 59000 | 120000 | 5000 | µg/kg | X | Y |
| SO | BVBS1299 | BVBS1299S005 | N | 8/18/2015 | 4 - 5.5 | SW8015B | HC | Diesel Range Organics (C8-C11) | **1200000 =** | 59000 | 120000 | 1000 | µg/kg | X | Y |
| SO | BVBS1299 | BVBS1299S005 | N | 8/18/2015 | 4 - 5.5 | SW8015B | HC | GRO (C4-C12) | **560000 =** | 11000 | 23000 | 1000 | µg/kg | X | Y |
| SO | BVBS1299 | BVBS1299S005 | N | 8/18/2015 | 4 - 5.5 | SW8015B | HC | TOTAL EFH(C8-C40) | **9000000 =** | 59000 | 120000 | 10000 | µg/kg | X | Y |
| SO | BVBS1299 | BVBS1299S005 | N | 8/18/2015 | 4 - 5.5 | SW8270C-SIM | PAH | Anthracene | **52 =** | 5.9 | 12 | 2.5 | µg/kg | X | Y |
| SO | BVBS1299 | BVBS1299S005 | N | 8/18/2015 | 4 - 5.5 | SW8270C-SIM | PAH | Benzo(a)anthracene | 45 = | 5.9 | 12 | NC | µg/kg | | NC |
| SO | BVBS1299 | BVBS1299S005 | N | 8/18/2015 | 4 - 5.5 | SW8270C-SIM | PAH | Benzo(a)pyrene | 50 = | 5.9 | 12 | NC | µg/kg | | NC |
| SO | BVBS1299 | BVBS1299S005 | N | 8/18/2015 | 4 - 5.5 | SW8270C-SIM | PAH | Benzo(b)fluoranthene | 60 = | 5.9 | 12 | NC | µg/kg | | NC |
| SO | BVBS1299 | BVBS1299S005 | N | 8/18/2015 | 4 - 5.5 | SW8270C-SIM | PAH | Benzo(ghi)perylene | **67 =** | 5.9 | 12 | 2.5 | µg/kg | X | Y |
| SO | BVBS1299 | BVBS1299S005 | N | 8/18/2015 | 4 - 5.5 | SW8270C-SIM | PAH | Benzo(k)fluoranthene | 14 = | 5.9 | 12 | NC | µg/kg | | NC |
| SO | BVBS1299 | BVBS1299S005 | N | 8/18/2015 | 4 - 5.5 | SW8270C-SIM | PAH | Chrysene | 32 = | 5.9 | 12 | NC | µg/kg | | NC |
| SO | BVBS1299 | BVBS1299S005 | N | 8/18/2015 | 4 - 5.5 | SW8270C-SIM | PAH | Fluoranthene | **280 =** | 5.9 | 12 | 5.2 | µg/kg | X | Y |
| SO | BVBS1299 | BVBS1299S005 | N | 8/18/2015 | 4 - 5.5 | SW8270C-SIM | PAH | Fluorene | **110 =** | 5.9 | 12 | 3.8 | µg/kg | X | Y |

TABLE 9-7

**Detected Constituents - August 2015 Post-ISCO Soil Sampling**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (feet) | Method | Class | Analyte | Final Result | MDL | RL | FSP SL | Units | FSP Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1299 | BVBS1299S005 | N | 8/18/2015 | 4 - 5.5 | SW8270C-SIM | PAH | Indeno(1,2,3-cd)pyrene | 32 = | 5.9 | 12 | NC | µg/kg | | NC |
| SO | BVBS1299 | BVBS1299S005 | N | 8/18/2015 | 4 - 5.5 | SW8270C-SIM | PAH | Naphthalene | **99 =** | 5.9 | 12 | 3.6 | µg/kg | X | Y |
| SO | BVBS1299 | BVBS1299S005 | N | 8/18/2015 | 4 - 5.5 | SW8270C-SIM | PAH | PAHTEQM | **65.42 =** | | | 4.47 | µg/kg | X | Y |
| SO | BVBS1299 | BVBS1299S005 | N | 8/18/2015 | 4 - 5.5 | SW8270C-SIM | PAH | Phenanthrene | **200 =** | 5.9 | 12 | 3.9 | µg/kg | X | Y |
| SO | BVBS1299 | BVBS1299S005 | N | 8/18/2015 | 4 - 5.5 | SW8270C-SIM | PAH | Pyrene | **390 =** | 5.9 | 12 | 5.6 | µg/kg | X | Y |
| SO | BVBS1299 | BVBS1299S005 | N | 8/18/2015 | 4 - 5.5 | SW8270C-SIM | PHTH | Bis(2-ethylhexyl)phthalate | **1700 =** | 12 | 23 | 61 | µg/kg | X | Y |
| SO | BVBS1299 | BVBS1299S005 | N | 8/18/2015 | 4 - 5.5 | SW8260B | VOC | 2-Butanone (MEK) | **49 J** | 5.9 | 24 | 20 | µg/kg | X | Y |
| SO | BVBS1299 | BVBS1299S005 | N | 8/18/2015 | 4 - 5.5 | SW8260B | VOC | Acetone | **310 J** | 5.9 | 24 | 20 | µg/kg | X | Y |
| SO | BVBS1299 | BVBS1299S005 | N | 8/18/2015 | 4 - 5.5 | SW8260B | VOC | Benzene | **31 J** | 1.2 | 5.9 | 5 | µg/kg | X | Y |
| SO | BVBS1299 | BVBS1299S005 | N | 8/18/2015 | 4 - 5.5 | SW8260B | VOC | cis-1,2-Dichloroethene | 1.7 J | 1.2 | 5.9 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S005 | N | 8/18/2015 | 4 - 5.5 | SW8260B | VOC | Ethylbenzene | 4.9 J | 1.2 | 5.9 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S005 | N | 8/18/2015 | 4 - 5.5 | SW8260B | VOC | Isopropylbenzene | 1.3 J | 1.2 | 5.9 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S005 | N | 8/18/2015 | 4 - 5.5 | SW8260B | VOC | sec-Butylbenzene | **14 J** | 1.2 | 5.9 | 5 | µg/kg | X | Y |
| SO | BVBS1299 | BVBS1299S005 | N | 8/18/2015 | 4 - 5.5 | SW8260B | VOC | tert-Butylbenzene | 1.5 J | 1.2 | 5.9 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S005 | N | 8/18/2015 | 4 - 5.5 | SW8260B | VOC | Trichloroethene | 5 J | 1.2 | 5.9 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S006 | N | 8/18/2015 | 7 - 8 | SW8015B | HC | TOTAL EFH(C8-C40) | 4700 J | 2700 | 5400 | 10000 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S006 | N | 8/18/2015 | 7 - 8 | SW8260B | SVOC | tert-Butyl alcohol | 11 J | 9.8 | 49 | 50 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S006 | N | 8/18/2015 | 7 - 8 | SW8260B | VOC | Acetone | 19 J | 4.9 | 20 | 20 | µg/kg | | N |

Notes:

FD = field duplicate sample

FS = field split sample

HC = hydrocarbons

µg/kg = microgram(s) per kilogram

MEK = methyl ethyl ketone

N = normal sample

**Class Abbreviations:**

NC = no criteria

PAH = polycyclic aromatic hydrocarbon

PHTH = phthalates

SO = subsurface soil sample

SVOC = semivolatile organic compound

VOC = volatile organic compound

**Validation Flags**

J Analyte is present but the reported quantitation is estimated.

= Reported quantitation represents the most accurate concentration for the given analyte.

Results shown in **bold red** font were detected above the respective FSP screening level.

### 9.2.3 Deviations from Work Plan

Unexpected challenges and conditions were encountered in the field during and after the installation of the bioventing system, which also caused deviations to the ISCO phase of the approved work plan (NASA, 2014b). These deviations are summarized in Table 9-8.

TABLE 9-8
**Bravo Skim Pond–Bioventing/ISCO Treatability Study: Deviations to the ISCO Pilot Study**
*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Issue | Deviation | Resolution |
|---|---|---|
| Additional soil sampling locations and one additional paired soil vapor probe was needed to support the ISCO phase of the PS. | Install additional paired SVP probe and add three additional soil sampling locations. | One additional paired piezometer (SVP-8a and b) and three additional soil sampling stations (BVBS1297, BVBS1298, and BVBS1299) were added to the bioventing PS area during the midpoint sampling event. |

Notes:
ISCO = in situ chemical oxidation
PS = pilot study
SVP = soil vapor probe

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SECTION 10

# Bioventing Results and Discussion

## 10.1 Injection Air Flow

As shown in Table 9-4, an average flow of 21.3 scfm was injected into the biovent well through its 5-foot screen, achieving approximately 4.3 scfm/foot of screen under an average pressure of 33.4 inches of water. The amount of flow varied from 20.2 scfm at 37 inches of water to 25.6 scfm at 30 inches of water. Applying a power function to the well flow and pressure data, it is apparent that rate of flow into the injection well increased with time by approximately 40 percent in terms of the pressure required for flow. This is likely due to the drying out of soil adjacent to the well screen from the injection of low relative humidity air.

## 10.2 Pressure Response

The pressure responses shown in Table 9-4 exhibit two primary patterns, the first being nominal conditions and the second showing some response to a preceding precipitation event. The following two types of responses were observed:

- After some period following a precipitation event, a sharp drop in SVP pressure is observed. This occurred in SVP-5a on February 10 to midday on February 11, 2015, after the trace precipitation recorded on February 7, 2015, and in all SVPs after the precipitation events of February 22 and 23, 2015, and March 1 to 3, 2015. In the initial case with SVP-5a, the pressures returned to nominal levels about 3.5 days after the rainfall; in the second case, with heavier rainfall, the pressures returned to normal after approximately 20 days in SVP-6a and SVP-7a and had not returned to nominal after 23 days in SVP-5a.
- After the heaviest rainfall (March 1 to 3, 2015; 1.44 inches), over-pressurization was observed at SVP-5a and SVP-7a (20 percent [25 percent higher than under nominal flow]), lasting through March 6, 2015, in SVP-5a and through March 10, 2015, in SVP-7a.

These two conditions are interpreted to be related to a wetting of the general shallow subsurface, thereby reducing the soil's air permeability and resulting in a much lower observed pressure at the SVPs, and then gradually drying out, and in the second case, they are related to an advancing pressure front, from an initial wave of infiltration, lasting a matter of days.

Under nominal pressure conditions, SVP-7a displayed the highest pressure response, at 3.2 percent of the injected pressure; SVP-6a displayed the next highest pressure response at 2.8 percent; and SVP-5a displayed a pressure response of 2.2 percent. These piezometers being 10, 5, and 15 feet, respectively, from the injection well illustrate a pattern of anisotropy or preferential flow directions in this part of the Bravo Skim Pond, away from the pond boundary.

A summary of the observed pressure data (nominal response, unaffected by temporary wetting from precipitation) is shown in Table 10-1.

TABLE 10-1
**Observed SVP Pressure Distribution–Bravo Skim Pond–Bioventing/ISCO Treatability Study**
*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Well ID | Average Observed Pressure (inches $H_2O$) | Percentage of Applied Pressure (%) | Distance from BV Well (feet) | General Direction from BV Well |
|---|---|---|---|---|
| BV | 33.36 | 100 | - | - |
| SVP-5a | 0.73 | 2.2 | 15 | south |
| SVP-6a | 0.94 | 2.8 | 5 | west |
| SVP-6b | 0.20 | 0.6 | 5 | west |
| SVP-7a | 1.07 | 3.2 | 10 | east |

Notes:
BV = biovent
SVP = soil vapor probe

The data also suggest that the upper and middle range of the soil sediment supports greater air flow than the surface soil or the soil near the bedrock contact. The zone over which positive pressure responses were observed suggests that pressure responses could be expected laterally to a distance equal to at much as 3 times the depth of injection. In addition, the one deep probe where pressure was successfully measured (SVP-6b) did so to a much lesser degree than the upper probes; together with the other two deep probes that were abandoned for field vapor monitoring because they could not produce sufficient air flow, there appears to be a condition suppressed air flow near the bottom of this soil profile, which is likely the result of an accumulation of moisture in the deeper zone.

Rainfall events also had a significant effect on pressure distribution, and probably air flow, with some degree of variation (highest effect to the east, toward the center of the pond). Rainfall events correlate with nominal suppressed pressure responses (Table 10-2). Pressure data provided in Table 9-4 demonstrates that precipitation effects are temporary, but that the duration of their effect varies in relation to the magnitude of rainfall.

TABLE 10-2
**SVP Pressure as Affected by Precipitation – Bravo Skim Pond Bioventing/ISCO Treatability Study**
*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Well ID | Average Nominal Pressures (inches $H_2O$) | Average of Nominal Pressures (%) | Average of Suppressed Pressures | Percent Reduction in Pressure from Precipitation |
|---|---|---|---|---|
| BV | 33.36 | 100 | 100 | - |
| SVP-5a | 0.73 | 2.2 | 0.11 | 85% |
| SVP-6a | 0.94 | 2.8 | 0.16 | 83% |
| SVP-6b | 0.20 | 0.6 | 0.60 | - |
| SVP-7a | 1.07 | 3.2 | 0.05 | 95% |

Notes:
BV = biovent
SVP = soil vapor probe

# 10.3 Oxygen Distribution

## 10.3.1 Delivery of Oxygen through Soil

In this shallow setting, substantial oxygen already was available  greater than 14 percent), but the pattern of pre-existing TPH concentrations in soil suggests that the natural resupply of oxygen has not been sufficient to promote complete degradation throughout the entire soil profile. In this context, the function of bioventing is to resupply the oxygen to raise its concentration to atmospheric and maximize the diffusional gradient of oxygen toward otherwise isolated zones.

A summary of minimum and maximum oxygen levels and the amount of increase observed at each SVP are summarized in Table 10-3 and illustrated on Figure 10-1. All oxygen concentrations collected during the oxygen uptake test and on 1 day following the oxygen uptake test are summarized in Appendix E-6. Graphical representations of parameters collected at each SVP are provided in Appendix E-5.

TABLE 10-3
**Observed Oxygen Distribution – Bravo Skim Pond Bioventing/ISCO Treatability Study**
*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Probe ID | Minimum $O_2$ Levels (%) | Maximum $O_2$ Levels (%) | $O_2$ Increase (%) |
|---|---|---|---|
| SVP-5a | 14.1 | 20.9 | 6.8 |
| SVP-6a | 19.0 | 21.0 | 2.0 |
| SVP-6b | 16.6 | 20.5 | 3.9 |
| SVP-7a | 17.0 | 20.8 | 3.8 |

Note:
SVP = soil vapor probe

Oxygen distribution was observed at all SVPs where monitoring was possible. The greatest increase in oxygen levels was noted in SVP-5a (approximately 15 feet south of the BV Well), with an increase of 6.8 percent from its lowest previous value. The highest pre-existing oxygen level was in SVP-6a, at 19 percent. All of the measured SVPs achieved nearly atmospheric oxygen readings within hours of the initiation of injection.

Because of insufficient flow when trying to extract air from SVP-5b and SVP-7b, no oxygen monitoring data could be collected, but it is expected oxygen was not delivered advectively to these areas because of low effective air permeability. Over a much longer term than this test, diffusive delivery of oxygen might be possible.

As seen in Appendix E-6, there is an erratic pattern in the initial oxygen levels in contrast to steadier and slightly higher levels of oxygen later in the pilot test. Specifically, this transition from variable to steady appears to occur after March 1, 2015, following rainstorms. It is likely that the influence of the precipitation caused an upset in the stabilization of air flow and oxygen supply processes.

The increased wetting of this precipitation led to a sharp reduction in the pressure measured at the SVPs; the fact that there was still some pressure is either consistent with the continued delivery of air to those points or with an advancing infiltration front of rainwater. That the oxygen levels became steadier and higher suggests that the advancing infiltration front had both a supply and stabilization effect on the subsurface. Although the amount of oxygen supplied is comparable to that achieved quickly by bioventing alone, the stabilization effect is much stronger. The mechanisms as to why precipitation should have this stabilizing effect are not well understood and cannot be determined in this study.

## 10.4 COC Degradation in Soil

This section presents the evaluation of concentration changes in the soil during the field testing. The detailed calculations supporting the discussion below are presented in Appendix H.

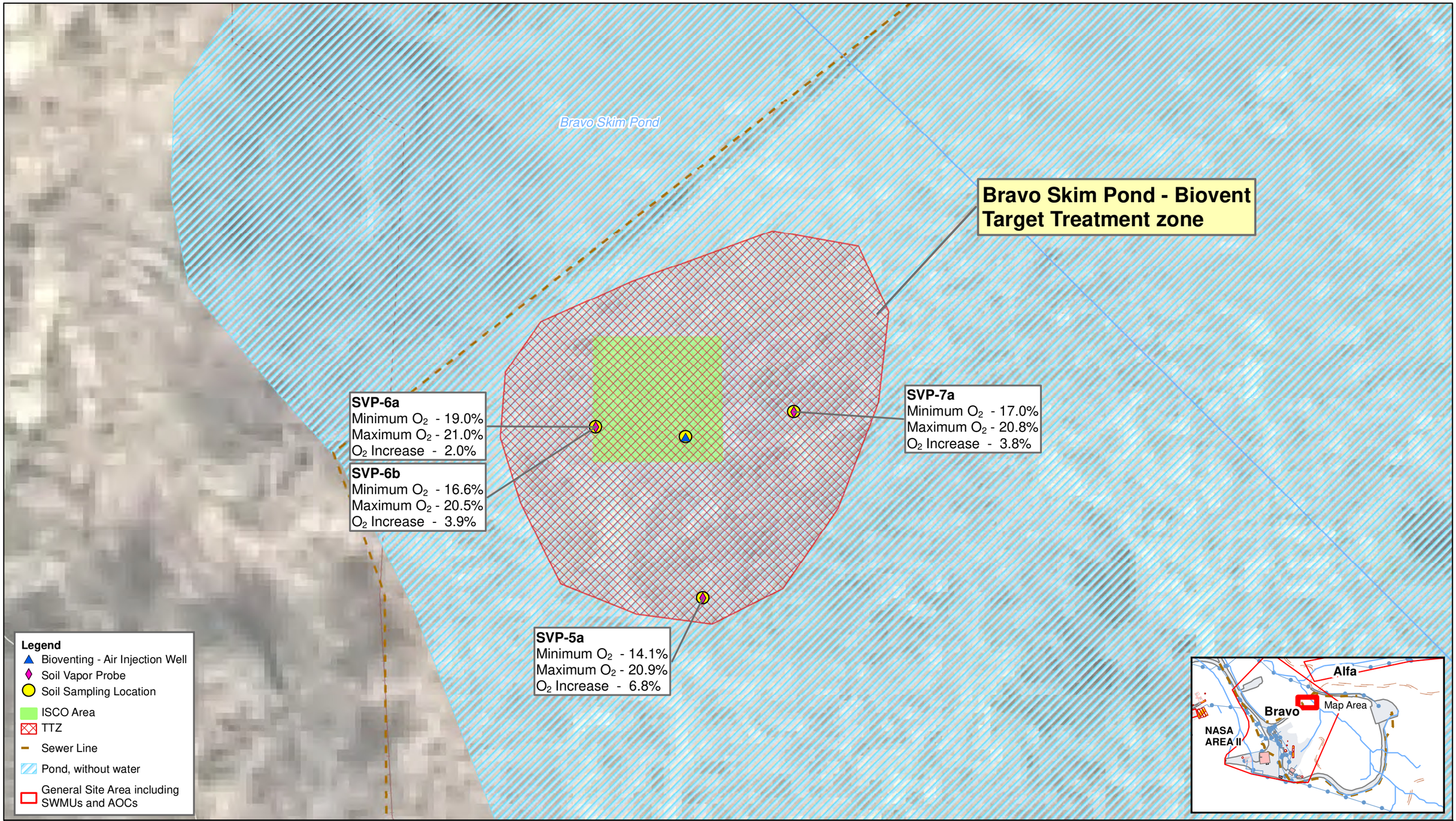
### 10.4.1 COC Concentration Changes

An evaluation of the soil sampling results revealed 25 analytes exceeded screening levels in samples collected prior to bioventing or during the midpoint of bioventing. These COCs consisted of six TPH carbon ranges, eight PAHs, three phthalates, and eight VOCs (Table 10-4). To evaluate the effectiveness of the

TABLE 10-4
**Analytes with Screening Level Exceedances**
*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Analyte Class | Analyte | Exceedance Count | SL (µg/kg) |
|---|---|---|---|
| HC | Diesel Range Organics (C12-C14) | 14 | 5000 |
| HC | Diesel Range Organics (C15-C20) | 16 | 5000 |
| HC | Diesel Range Organics (C21-C30) | 10 | 5000 |
| HC | Diesel Range Organics (C8-C11) | 7 | 1000 |
| **HC** | **GRO (C4-C12)** | **13** | **1000** |
| **HC** | **TOTAL EFH(C8-C40)** | **18** | **10000** |
| PAH | Acenaphthene | 3 | 2.5 |
| PAH | Anthracene | 7 | 2.5 |
| PAH | Benzo(ghi)perylene | 13 | 2.5 |
| PAH | Fluoranthene | 13 | 5.2 |
| PAH | Fluorene | 4 | 3.8 |
| **PAH** | **PAHTEQ** | **10** | **4.47** |
| PAH | Phenanthrene | 7 | 3.9 |
| PAH | Pyrene | 14 | 5.6 |
| **PHTH** | **Bis(2-ethylhexyl)phthalate** | **13** | **61** |
| PHTH | Dimethyl phthalate | 2 | 27 |
| PHTH | Di-n-octyl phthalate | 2 | 27 |
| VOC | 1,2,4-Trimethylbenzene | 4 | 5 |
| VOC | Acetone | 4 | 20 |
| VOC | Ethylbenzene | 3 | 5 |
| VOC | Isopropylbenzene | 2 | 5 |
| VOC | n-butylbenzene | 2 | 5 |
| **VOC** | **n-Propylbenzene** | **5** | **5** |
| VOC | o-Xylene | 2 | 5 |
| **VOC** | **sec-Butylbenzene** | **6** | **5** |

Notes:
Exceedance Count: number of SL exceedances for each analyte among pre-bioventing and midpoint bioventing soil samples
SL = screening level
**Highlighted** analytes selected for evaluation of treatment effectiveness.




04-Aug-2015
Drawn By:
A. Cooley

**Figure 10-1**
**Bravo Skim Pond Area - Bioventing Pilot Study SVP $O_2$ Observations**
**Soil Treatability Studies Summary**
**NASA SSFL, Ventura County, California**

Map Document: O:\NASA\SSFL\maps\TreatabilityStudy\BRAVO_BioventTM_O2_Observation.mxd

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treatment, representative analytes within each of the four analyte classes were identified based on the greatest number of exceedances and the greatest overall magnitudes of exceedance. The representative analytes identified are listed in Table 10-5.

TABLE 10-5
**Representative Analytes Exceeding Screening Levels**
*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Analyte | Analyte Class |
|---|---|
| Total EFH (C8-C40) | TPH |
| GRO (C4-C12) | TPH |
| PAH toxic equivalency (PAHTEQ) | TPH |
| Bis(2-ethylhexyl)phthalate | Phthalate |
| n-Propylbenzene | VOC |
| Bis(2-ethylhexyl)phthalate | VOC |

Notes:
EFH = extractable fuel hydrocarbons
TPH = total petroleum hydrocarbons
VOC = volatile organic compound

The following methodology was used to evaluate the effectiveness of the treatment with regard to COC degradation in soil:

- For each of 7 soil sampling stations, samples were collected from 2 depth intervals (14 locations total).
- For each sample location, the *starting* concentration was selected as the greatest of the February 4, 2015, or March 3, 2015, concentration among both normal samples and field duplicates. The April 10, 2015, sample result was used for the post-bioventing concentration, selecting the greatest concentration among both normal samples and field duplicates.
- For each analyte, the concentration change was calculated at each sample location. The mean concentration change and the mean percent change then were determined. Statistical analysis of each analyte can be found in Appendix E-7.

As shown in Table 10-4, the mean concentrations for the six representative analytes decreased by 24.5 percent to 57.0 percent. The t-tests indicated statistically significant mean concentration changes for Total EFH (C8-C40), PAHTEQ, and sec-Butylbenzene. For the other analytes, substantial mean percent concentration changes were observed, but given the large standard deviations for the concentration changes, they were not determined to be statistically significant.

TPH concentrations increased at three sample locations, resulting in mean concentration increases. These concentration increases likely are related to the heterogeneity of soil and COC distribution in the Bravo Area and the inherent variability associated with soil sampling results. As shown in Table 10-6, some sample results were well below screening levels. In general, greater and more consistent TPH concentration reductions were observed in areas where starting concentrations were greater.

### 10.4.2 Comparison to Screening Levels

The final evaluation of treatment effectiveness was to count the number of sample locations where concentrations exceeded a screening level before the treatment and where concentrations were below the screening level after the treatment. As shown in Table 10-7, such concentration reductions were observed at 25 percent to 50 percent of the sample locations where a screening level exceedance was observed for the analytes listed previously.

### 10.4.3 Spatial Degradation Patterns

The greatest soil treatment was observed to take place within a 5- to 8-foot radius from the BV well; degradation occurred rapidly at this distance as observed in locations BVBS1297, BVBS1298, and BVBS1299 (drilled during midpoint sampling and sampled again during the final sampling event). Degradation of COCs was not definitively discernable at greater distances and did not necessarily occur equally in all directions extending outward from the BV well.

### 10.4.4 Ancillary Screening Level Evaluation

As shown in Table 2.2-2 of the project work plan (NASA, 2014b), 10 parameters were identified for ancillary comparison of soil sampling results to a variety of screening levels following bioventing. The identified screening levels were as follows:

- LUT value or QAPP RL
- Ecological RBSL (No Effect Level)
- EPA Region 9 Residential Soil RSL
- EPA Region 9 Industrial Soil RSL
- SRAM Residential Soil RBSL
- SRAM Recreational Soil RBSL
- SRAM Industrial Soil RBSL

The 10 parameters identified in the work plan for comparison to these screening levels were as follows:

- Acetone
- Benzo(ghi)perylene
- Fluoranthene
- Phenanthrene
- Pyrene
- Trichloroethene
- PAHTEQ
- EFH (C14-C20)
- EFH (C20-C30)
- TOTAL EFH(C8-C40)

TABLE 10-6

**Mean Concentration Changes for Representative Analytes following Bioventing Operations**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Analyte Class | Analyte | Units | Mean Starting Concentration | Mean Post-Bioventing Concentration | Mean Concentration Decrease | Mean Percent Decrease | n | t-test p-value |
|---|---|---|---|---|---|---|---|---|
| TPH | Total EFH (C8-C40) | | | | | | | |
| | - all concentrations | mg/kg | 4296.9 | 1846.6 | 2450.3 | 57.0% | 14 | 0.0306 |
| | - high concentration subgroup | mg/kg | 11920.0 | 4861.7 | 7058.3 | 59.2% | 5 | 0.0158 |
| | - low concentration subgroup | mg/kg | 61.8 | 171.5 | -109.7 | -177.7% | 9 | 0.9070 |
| TPH | GRO (C4-C12) | | | | | | | |
| | - all concentrations | mg/kg | 549.6 | 414.8 | 134.7 | 24.5% | 13 | 0.0736 |
| | - high concentration subgroup | mg/kg | 1416.0 | 1039.6 | 376.4 | 26.6% | 5 | 0.0571 |
| | - low concentration subgroup | mg/kg | 8.1 | 24.4 | -16.3 | -202.9% | 8 | 0.9120 |
| PAH | PAHTEQ | µg/kg | 45.6 | 21.5 | 24.1 | 52.8% | 9 | 0.0297 |
| Phthalate | Bis(2-ethylhexyl)phthalate | µg/kg | 839.4 | 470.3 | 369.1 | 44.0% | 12 | 0.0837 |
| VOC | n-Propylbenzene | µg/kg | 11.7 | 5.3 | 6.4 | 54.7% | 6 | 0.0827 |
| VOC | sec-Butylbenzene | µg/kg | 18.2 | 8.2 | 10.0 | 54.7% | 6 | 0.0223 |

Notes:

µg/kg = microgram(s) per kilogram
mg/kg = milligram(s) per kilogram
PAHTEQ = PAH toxic equivalency
EFH = extractable fuel hydrocarbon
n = number of results used in calculation
TPH = total petroleum hydrocarbons
GRO = gasoline range organic
PAH = polycyclic aromatic hydrocarbon
VOC = volatile organic compound

1) An evaluation of soil sampling results revealed 25 analytes (among 4 analyte classes) where exceedances of screening levels (SLs) occurred prior to bioventing or during the midpoint of bioventing.

2) Among these 4 analyte classes, 6 analytes (shown above) with the greatest number of SL exceedances and the greatest overall magnitudes of exceedance were identified to evaluate treatment effectiveness.

3) For each of 7 sampling stations, samples were collected from 2 depth intervals (14 locations total).

- At 4 of 7 sampling stations, samples were collected before bioventing (Feb 4), at midpoint of bioventing (Mar 3), and after bioventing (Apr 10).
- At 3 of 7 sampling stations, samples were collected at midpoint of bioventing (Mar 3) and following bioventing (Apr 10).

4) For each sample location, the *starting* concentration was selected as the greatest of Feb 4 or Mar 3 concentration among normal samples and field duplicates. The Apr 10 sample result was used for the post-bioventing concentration, selecting the greatest value among normal samples and field duplicates.

- Non-detect results evaluated as one-half the reporting limit.
- If result was non-detect and corresponding result had a measured concentration, the measured concentration was selected.
- If both starting and post-bioventing concentrations were non-detect, the result was excluded from the evaluation (reflected as n-values < 14 in the table).

6) For each analyte, the mean starting concentration was compared to the mean post-bioventing concentration.

7) Two-sample t-tests for the difference between means (data paired by sample location) were calculated for each analyte.

- n: number of results used in calculation
- Using a standard significance level ($\alpha = 0.05$), p-values less than 0.05 may be considered statistically significant (assuming a normal data distribution).

8) For Total EFH (extractable fuel hydrocarbons) and GRO (gasoline range organics), bimodal distributions were observed in the starting concentration data. Results for these high-concentration and low-concentration subgroups also are shown above.

TABLE 10-7
**Concentration Reductions to Below Screening Levels following Bioventing Operations**
*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Analyte Class | Analyte | Screening Level | Concentration Reduction from Above to Below the Screening Level Following Treatment* | |
|---|---|---|---|---|
| TPH | Total EFH (C8-C40) | 10 mg/kg | 3 of 12 sample locations | (25%) |
| TPH | GRO (C4-C12) | 1 mg/kg | 3 of 12 sample locations | (25%) |
| PAH | PAHTEQ | 4.47 µg/kg | 4 of 9 sample locations | (44%) |
| Phthalate | Bis(2-ethylhexyl)phthalate | 61 µg/kg | 5 of 11 sample locations | (45%) |
| VOC | n-Propylbenzene | 5 µg/kg | 2 of 4 sample locations | (50%) |
| VOC | sec-Butylbenzene | 5 µg/kg | 2 of 5 sample locations | (40%) |

Notes:
µg/kg = microgram(s) per kilogram
EFH = extractable fuel hydrocarbon
GRO = gasoline range organic
mg/kg = milligram(s) per kilogram
PAH = polycyclic aromatic hydrocarbon
PAHTEQ = PAH toxic equivalency
TPH = total petroleum hydrocarbon
VOC = volatile organic compound
*Number of sample locations does not include locations where a screening level exceedance was not observed.

The comparison of sample results for these screening levels and parameters before and after bioventing are shown in Appendix E-2 and described as follows:

- For acetone, benzo(ghi)perylene, phenanthrene, and fluoranthene, all starting and post-bioventing concentrations were above their respective LUT values or QAPP RLs; all starting and post-bioventing concentrations were below the other screening levels.
- For pyrene: concentrations decreased from above to below the LUT values or QAPP RLs of 5.6 µg/kg at 2 of 14 sample locations following bioventing; both the starting and post-bioventing concentrations were above the LUT values or QAPP RLs at 9 sample locations; and both the starting and post-bioventing concentrations were below the LUT values or QAPP RLs at 3 sample locations. All concentrations were below the other screening levels at all sampling locations.
- For trichloroethene, all concentrations at all sample locations were below all screening levels.
- For PAHTEQ, the concentrations decreased from above to below the LUT value of 4.47 µg/kg at 4 of 14 sample locations following bioventing; both the starting and post-bioventing concentrations were above the LUT value at 4 sample locations; both the starting and post-bioventing concentrations were below the LUT value at 5 sample locations; and concentrations increased from below to above the LUT value at 1 sample location. For the SRAM Residential Soil RBSL of 40 µg/kg, PAHTEQ concentrations decreased from above to below this screening level at one sample location; both the starting and post-bioventing concentrations were above this screening level at two sample locations; and all other concentrations were below this screening level. For the SRAM Recreational Soil RBSL of 94 µg/kg, PAHTEQ concentrations decreased from above to below this screening level at two sample locations. All concentrations were below the other screening levels at all sampling locations.
- For EFH (C14-C20), the laboratory reported an actual carbon range of C15-C20. For this parameter, concentrations decreased from above to below the LUT values or QAPP RLs of 5 mg/kg at 2 of 14 sample locations; both the starting and post-bioventing concentrations were above the LUT values or QAPP RLs at 9 sample locations; both the starting and post-bioventing concentrations were below the LUT values or QAPP RLs at 2 sample locations; and concentrations increased from below to above the LUT values or QAPP RLs at 1 sample location. For the SRAM Residential, Recreational, and Industrial Soil RBSLs of 55, 581, and 317 mg/kg, respectively, the starting and post-bioventing concentrations were above these screening levels at four sample locations, and concentrations decreased from above to below these screening levels at one sample

location. Concentrations increased from below to above the SRAM Residential RBSL at three sample locations and at one sample location for SRAM Industrial Soil RBSL. All concentrations were below the other screening levels at the other sample locations.

- For EFH (C20-C30), the laboratory reported an actual carbon range of C21-C30. For this parameter, the concentrations decreased from above to below the LUT values or QAPP RLs of 5 mg/kg at 1 of 14 sample locations; both the starting and post-bioventing concentrations were above the LUT values or QAPP RLs at 8 sample locations; both the starting and post-bioventing concentrations were below the LUT values or QAPP RLs at 4 sample locations; and concentrations increased from below to above the LUT values or QAPP RLs at 1 sample location. All concentrations were below the other screening levels at all sampling locations.
- For EFH (C8-C40), concentrations decreased from above to below the LUT values or QAPP RLs of 10 mg/kg at 3 of 14 sample locations; both the starting and post-bioventing concentrations were above the LUT values or QAPP RLs at 9 sample locations; and both the starting and post-bioventing concentrations were below the LUT values or QAPP RLs at 2 sample locations. No criteria for EFH (C8-C40) were listed for the other screening levels.

# 10.5 Soil Vapor Extraction

## 10.5.1 Applicability of Soil Vapor Extraction

The pneumatic results demonstrated for bioventing in the Test Stand area (Section 9.1), as well as the oxygen distribution in the Bravo Pond Area (Section 10.3.1), show that SVE could be a feasible technology in similar settings. SVE is applicable at sites that support subsurface air flow (water table and bedrock at least 5 feet bgs; dry and coarse-grained soil). VOCs that do not respond to bioventing but that have moderate-to-high vapor pressure and low-to-moderate solubility, such as PCE, TCE, Freon, 1,1,1-trichloroethane, usually can be treated by SVE. Compounds that meet these solubility and volatility criteria but are also easily degraded by aerobic processes, such as fuel hydrocarbons and acetone, can be either vapor extracted or biovented.

Whereas bioventing is typically employed by injecting air, a vacuum is applied for SVE, and vapors throughout the zone of induced flow are collected and treated (typically with vapor-phase granular activated carbon). At a site like the Bravo Test Stand, just two or three shallow wells screened from 3 to 5 feet in the trench backfill would be sufficient to collect VOCs throughout the backfill of that area. In an area like the Bravo Ponds, SVE could be of some benefit, but some of the VOCs might not have sufficient volatility and the site itself might not support sufficient flow without closely spaced (i.e., 10-foot) extraction wells.

In other areas, SVE should be considered for application where the thickness of non-clayey soil is at least 5 feet above rock and the water table and where there is some control over the air permeability of the ground surface to limit short-circuiting.

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SECTION 11

# ISCO Results and Discussion

## 11.1 ISCO Solution Distribution

An evaluation of ISCO solution distribution during infiltration was performed by assessing multiple lines of evidence, as follows:

- The distribution of ISCO solution primarily was evaluated by the presence of fluid at monitoring locations within the infiltration area (9-1) in SVP-6a/b, SVP-8a/b, and the BV well. Fluid was present in the shallow center of the infiltration area throughout the infiltration period and was detected in the deep southeast quadrant at the end of the second day of infiltration. These observations suggest that solution infiltration was heterogeneous laterally and vertically throughout the infiltration area and limited in the southeast quadrant.
- The lack of fluid in monitoring locations SVP-5a/b (11 feet south of the infiltration area) and SVP-7a/b (6 feet east of the infiltration area) suggests that a significant degree of lateral channelized fluid flow or flow along the top of the bedrock did not occur to the east or south.
- Based on the persulfate field data collected from the two monitoring locations where fluid was present, the oxidant dosage was sufficient, with pore water concentrations decreasing from roughly 35 g/L in SVP-8a to about 12 g/L at the bottom of the BV well. However, pH levels decreased from about 12 in SVP-8a to between 6 and 7 at the bottom of the BV well, indicating that insufficient sodium hydroxide was added to the solution to activate the persulfate by the time the solution reached the bottom of the infiltration area.
- The ISCO solution distribution was also assessed by comparing the analytical results for soil samples collected within the infiltration area before and after ISCO infiltration. Concentration reductions were observed for multiple COCs at 4 of the 10 soil sample locations: shallow BVBS1295, shallow BVBS1297, deep BVBS1298, and deep BVBS1299 (Figure 9-2). At the other soil sample locations, no substantial concentration reductions were observed. This includes deep BVBS1295 (southeast quadrant), where ISCO solution with low pH (6 to 7) was detected at the end of the second day of infiltration. The presence of solution but lack of COC treatment corroborates the idea that insufficient sodium hydroxide was added to the solution to activate the persulfate by the time it reached the bottom of the infiltration area.

Overall, the combination of fluid level, field parameters, and soil analytical results show that the distribution of the ISCO solution during infiltration was heterogeneous laterally and vertically throughout the infiltration area, and likely controlled by higher-permeability channels and lithologic layering in the soil column. Data also indicate that solution flow was limited in the southwest quadrant of the infiltration area and that the sodium hydroxide dosage was not sufficient to overcome the buffering capacity of the soil, and as a result, the persulfate was not completely activated throughout the soil column.

## 11.2 ISCO Treatment Effectiveness

### 11.2.1 COC Concentration Changes

Results for soil samples collected prior to bioventing or during the midpoint of bioventing revealed 25 analytes where screening level exceedances were observed. Six of these analytes were identified for evaluation based on the greatest number of screening level exceedances and the greatest overall magnitudes of exceedance. The representative analytes identified are listed in Table 11-1.

TABLE 11-1
**Representative Analytes Exceeding Screening Levels**
*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Analyte | Analyte Class |
|---|---|
| Total EFH (C8-C40) | TPH |
| GRO (C4-C12) | TPH |
| PAH toxic equivalency (PAHTEQ) | TPH |
| Bis(2-ethylhexyl)phthalate | Phthalate |
| n-Propylbenzene | VOC |
| Sec-Butylbenzene | VOC |

Notes:
EFH = extractable fuel hydrocarbons
PAH = polycyclic aromatic hydrocarbon
TPH = total petroleum hydrocarbons
VOC = volatile organic compound

The following methodology was used to evaluate the effectiveness of the ISCO treatment with regard to COC degradation in soil:

- Soil samples were collected from 5 soil sampling stations; samples were collected from 2 depth intervals (10 locations total).
- For the six representative analytes listed above, the analytical results for the soil samples collected on April 10, 2015 (following bioventing operations) were used to establish baseline conditions for the ISCO pilot test. These results were compared to those obtained from soil samples collected on August 18, 2015 (27 days after ISCO infiltration was completed).
- For each analyte, the concentration change was calculated at each sample location. The mean concentration change and the mean percent change then were determined. Statistical analysis of each analyte can be found in Appendix G-2.

As shown in Table 11-2, the mean concentration decrease was observed for GRO (C4-C12). As shown in Appendix G-2 and described previously, while substantial concentration reductions were observed for 5 of the 6 representative analytes at 4 of the 10 sample locations, the substantial concentration increases at other sample locations dominated the mean calculations. It is unlikely that infiltration of the ISCO solution actually increased COC concentrations within the infiltration area; rather, these concentration increases likely are related to the heterogeneity of soil and COC distribution in the Bravo Area and the inherent variability associated with soil sampling results.

The data for each of the six representative analytes were sorted by the pre-ISCO concentration. For EFH, mean concentrations increased; for GRO with high pre-ISCO concentrations, the mean concentration decreased by 63.2 percent; mean GRO concentrations increased in the low pre-ISCO concentration GRO.

Overall, these results suggest a lack of uniformity in the distribution of ISCO solution in the infiltration area. The ISCO solution may have flowed along preferential pathways of high permeability through some portions of the infiltration area, resulting in little to no oxidation of contaminants in other portions of the infiltration area. In other areas, the pH of the ISCO solution was not high enough after percolating through the soil column to activate the persulfate.

TABLE 11-2

**Mean Concentration Changes for Representative Analytes Following ISCO Treatment**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Analyte Class | Analyte | Units | SL | Mean Pre-ISCO Concentration | Mean Post-ISCO Concentration | Mean Concentration Decrease | Mean Percent Decrease | n | t-test p-value |
|---|---|---|---|---|---|---|---|---|---|
| TPH | Total EFH (C8-C40) | | | | | | | | |
| | all concentrations | mg/kg | 10 | 2796.4 | 3731.8 | -935.4 | -33.5% | 9 | 0.7974 |
| | high concentration subgroup | mg/kg | | 6075.0 | 8342.5 | -2267.5 | -37.3% | 4 | 0.7938 |
| | low concentration subgroup | mg/kg | | 173.4 | 43.2 | 130.2 | 75.1% | 5 | 0.2048 |
| TPH | GRO (C4-C12) | | | | | | | | |
| | all concentrations | mg/kg | 1 | 591.2 | 284.6 | 306.6 | 51.9% | 9 | 0.1067 |
| | high concentration subgroup | mg/kg | | 1297.5 | 478.0 | 819.5 | 63.2% | 4 | 0.0530 |
| | low concentration subgroup | mg/kg | | 26.1 | 129.8 | -103.7 | -397.7% | 5 | 0.7881 |
| PAH | PAHTEQ | µg/kg | 4.47 | 25.3 | 35.2 | -9.9 | -39.0% | 7 | 0.6933 |
| Phthalate | Bis(2-ethylhexyl)phthalate | µg/kg | 61 | 450.9 | 648.4 | -197.6 | -43.8% | 8 | 0.7421 |
| VOC | n-Propylbenzene | µg/kg | 5 | 7.7 | 9.3 | -1.6 | -20.7% | 4 | 0.7851 |
| VOC | sec-Butylbenzene | µg/kg | 5 | 9.8 | 12.4 | -2.6 | -26.7% | 5 | 0.8070 |

Notes:

µg/kg = microgram(s) per kilogram
mg/kg = milligram(s) per kilogram
SL = screening level
EFH = extractable fuel hydrocarbon
PAH = polycyclic aromatic hydrocarbon
TPH = total petroleum hydrocarbon
GRO = gasoline range organics
PAHTEQ = PAH toxic equivalency
VOC = volatile organic compound
ISCO = in situ chemical oxidation

1) An evaluation of soil sampling results revealed 25 analytes (among 4 analyte classes) where exceedances of screening levels (SLs) occurred prior to bioventing or during the midpoint of bioventing.

2) Among these 4 analyte classes, 6 analytes (shown above) with the greatest number of SL exceedances and the greatest overall magnitudes of exceedance were identified to evaluate treatment effectiveness.

3) For each sample location, the analytical results for the soil samples collected on April 10, 2015 (following bioventing operations) were used to establish baseline conditions for ISCO treatment. These results were compared to those obtained from soil samples collected on August 18, 2015 (27 days after ISCO infiltration).

- Non-detect results evaluated as one-half the reporting limit.
- Where field duplicates were collected, the greater of the two concentrations was selected.
- If either the field duplicate or the normal sample concentration was non-detect, the measured concentration was selected.
- If both the pre-ISCO and post-ISCO concentrations were non-detect, the result was excluded from the evaluation (reflected as n-values <10 above).

4) For each analyte, the mean pre-ISCO (post-bioventing) concentration was compared to the mean post-ISCO concentration.

- The mean pre-ISCO (post-bioventing) concentrations differ somewhat from those reported in the bioventing technical memorandum (NASA, 2015) because the above means calculated from fewer soil sampling results.

5) Two-sample t-tests for the difference between means (data paired by sample location) were calculated for each analyte.

- n: number of results used in calculation
- Using a standard significance level ($\alpha = 0.05$), p-values less than 0.05 may be considered statistically significant (assuming a normal data distribution).

6) For Total EFH (extractable fuel hydrocarbons) and GRO (gasoline range organics), bimodal distributions were observed in the pre-ISCO concentration data. Results for these high-concentration and low-concentration subgroups also are shown above.

## 11.2.2 Comparison to Screening Levels

The final evaluation of ISCO treatment effectiveness was to count the number of sample locations where concentrations exceeded screening levels before the treatment and concentrations were below the screening level after the treatment. As shown in Table 11-3, such concentration reductions were observed at 0 percent to 43 percent of the sample locations where a screening level exceedance was observed for the analytes listed above.

TABLE 11-3
**Concentration Reductions to Below Screening Levels Following ISCO Treatment**
*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Analyte Class | Analyte | SL | Concentration reduction from above to below the SL following treatment* | |
|---|---|---|---|---|
| TPH | Total EFH (C8-C40) | 10 mg/kg | 1 of 8 sample locations | (13%) |
| TPH | GRO (C4-C12) | 1 mg/kg | 2 of 8 sample locations | (25%) |
| PAH | PAHTEQ | 4.47 µg/kg | 3 of 7 sample locations | (43%) |
| Phthalate | Bis(2-ethylhexyl)phthalate | 61 µg/kg | 3 of 8 sample locations | (38%) |
| VOC | n-Propylbenzene | 5 µg/kg | 0 of 2 sample locations | (0%) |
| VOC | sec-Butylbenzene | 5 µg/kg | 0 of 3 sample locations | (0%) |

Notes:
µg/kg = microgram(s) per kilogram
EFH = extractable fuel hydrocarbon
GRO = gasoline range organic
ISCO = in situ chemical oxidation
mg/kg = milligram(s) per kilogram
PAH = polycyclic aromatic hydrocarbon
PAHTEQ = PAH toxic equivalency
SL = screening level
TPH = total petroleum hydrocarbon
VOC = volatile organic compound
*Number of sample locations does not include locations where an SL exceedance was not observed.

## 11.2.3 Ancillary Screening Level Evaluation

An ancillary comparison of soil sampling results following ISCO treatment was performed for the additional screening levels and parameters described above for bioventing. These results for before and after ISCO treatment are shown in Appendix G. Following ISCO treatment, the screening level comparison results were unchanged from those that occurred following bioventing with the following exceptions:

- For pyrene following ISCO treatment, concentrations decreased from above to below the screening level of 5.6 µg/kg at 3 of 14 sample locations, and concentrations increased from below to above the screening level at 2 sample locations.
- For PAHTEQ following ISCO treatment, concentrations decreased from above to below the screening level of 4.47 µg/kg at 3 of 14 sample locations, and concentrations increased from below to above the screening level at 2 sample locations. For the SRAM Residential Soil RBSL of 40 µg/kg, PAHTEQ concentrations decreased from above to below this screening level at one sample location, and concentrations increased from below to above this screening level at two sample locations. For the SRAM Recreational Soil RBSL of 94 µg/kg, PAHTEQ concentrations increased from below to above this screening level at one sample location.
- For EFH (C14-C20), the laboratory reported an actual carbon range of C15-C20. For this parameter following ISCO treatment, concentrations decreased from above to below the screening level of 5 mg/kg at 2 of 14 sample locations. For the SRAM Residential Soil RBSL of 55 mg/kg, concentrations decreased from above to below this screening level at three sample locations. For the SRAM Recreational and Industrial Soil RBSL of 581 and 318 mg/kg, respectively, concentrations decreased from above to below these screening levels at one additional sample location.

- For EFH (C20-C30), the laboratory reported an actual carbon range of C21-C30. For this parameter following ISCO treatment, concentrations decreased from above to below the screening level of 5 mg/kg at 3 of 14 sample locations.
- For EFH (C8-C40) following ISCO treatment, concentrations decreased from above to below the screening level of 10 mg/kg at 2 of 14 sample locations, and concentrations increased from below to above the screening level at 1 sample location.

## 11.3 Groundwater Sampling

Groundwater samples have been collected as required per the *General Waste Discharge Requirements for In-Situ Groundwater Remediation and Groundwater Re-Injection* (Order No. R4-2014-0187; File No. 01-116) permit granted by the Regional Water Quality Control Board (RWQCB) – Los Angeles Region on March 20, 2015. The groundwater samples were collected in the Bravo Skim Pond area as part of this TS to determine if ISCO operations impacted groundwater in the infiltration vicinity.

Three groundwater monitoring wells were sampled: downgradient wells ND-135 and PZ-155 and upgradient well HAR-19 (Figure 8-2). As required in the Waste Discharge Requirements (WDR), groundwater samples were collected prior to ISCO infiltration, weekly after initial infiltration for 4 weeks, monthly for the following 3 months, and quarterly thereafter. Quarterly sampling will continue for at least 1 year or as determined necessary by NASA and the RWQCB.

The groundwater monitoring results are presented in quarterly WDR monitoring reports and submitted to the RWQCB on a quarterly basis.

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SECTION 12

# Conclusions

The key conclusions for the DS, bench scale TS, and field scale PS components are discussed in this section. The project results will play an integral role in the identification and selection of effective remediation strategies for contaminated soil at SSFL.

## 12.1 Landfarming Conclusions

Landfarming has been demonstrated for the classes of petroleum compounds and for some related PAH and pesticide compounds found at SSFL. This review found that landfarming led to the successful reduction of TPH concentrations to levels that may not meet LUT values but that have been reduced significantly. Case histories provide guidance on essential operational strategies, as well as on techniques to accelerate landfarming remediation by combining with chemical oxidation. The nominal time required to implement landfarming can be as short as several months and as long as several years; the better that optimum conditions are understood for the target compounds, the shorter the required time to implement.

Landfarming involves excavation and hauling of soil to a staging area using conventional equipment. Treatment areas typically would be flat and have asphalt or concrete as a base and may be lined with HDPE. The available flat areas at SSFL that could be used for implementing this technology are limited to about 3 acres. Approximately 12,971 $yd^3$ of TPH-contaminated soil (greater than 1,000 mg/kg) require excavation for treatment at SSFL; 16.6 acres (723,240 $ft^2$) would be required to treat this soil in a single batch. The available area and the volume of soil requiring treatment indicate a total of 5.5 successive batches will be needed at SSFL.

## 12.2 Soil Washing Bench Scale TS Conclusions

Based on documented results of the soil washing bench scale TS conducted on contaminated soil from the CDFF, this technology can effectively achieve reductions in COC concentrations to the applicable criteria (LUT values or QAPP RLs, EPA Region 9 RSLs, and SRAM RBSLs). As shown in Section 4, post-treatment COC concentrations were generally more than 95 percent lower than the pre-treatment (baseline) samples. Further, all three wash solutions used during the test (water only, water plus Citrikleen, and water plus Biosolve) yielded relatively similar percentage reduction results in the end process. However, from an efficacy standpoint, the excessive water demands required by soil washing, especially when considering potential requirements for a full-scale version of the process, make this technology impractical in the arid site setting where water resources are heavily strained by prevailing local drought conditions. Therefore, soil washing is not the most practical/feasible choice for ongoing remediation efforts for contaminated soil at SSFL.

## 12.3 Thermal Desorption Bench Scale TS Conclusions

Based on documented results of the thermal desorption bench scale TS conducted on contaminated soil from the ABFF, this technology can effectively achieve reductions in COC concentrations to the applicable criteria (LUT values or QAPP RLs, EPA Region 9 RSLs, and SRAM RBSLs), with improved performance for higher temperatures. As shown in Section 4, post-treatment COC concentrations for the low temperature test were generally 60 to 80 percent lower than the pre-treatment (baseline), whereas post-treatment COC concentrations for the high temperature test indicated effectively 100 percent removal. Further, both retention times used during the test (15 and 30 minutes) yielded relatively similar percentage reduction results in the end process. Moreover, from an efficacy standpoint, the potential implementation of a full-scale version of the process makes this technology practical. Therefore, further pilot testing may be warranted for thermal desorption as a choice for ongoing remediation efforts for contaminated soil at SSFL.

## 12.4 Bioventing Field Scale PS Conclusions

Based on field and laboratory analytical results of the bioventing field scale TS conducted on contaminated soil at the Bravo Skim Pond, this technology can effectively achieve reductions in COC concentrations to the applicable

criteria (LUT values or QAPP RLs, EPA Region 9 RSLs, and SRAM RBSLs). As described in Section 7.1.1.1, post-treatment mean COC concentrations ranged from 24.5 to 57 percent lower than the pre-treatment (baseline) samples. However, TPH concentrations also showed an increase at three locations compared to the baseline samples, likely because of the heterogeneity of subsurface soil and inherent variability associated with soil sampling results. From an overall effectiveness standpoint, the challenges associated with air flow during soil gas sampling, contaminant and contaminated soil characteristics, and subsurface heterogeneity and variability driving the tendency for preferential flow pathways make this technology impractical for a full-scale version of this process at SSFL. Therefore, bioventing is not the most practical/feasible choice for ongoing remediation efforts for contaminated soil at SSFL.

## 12.5 ISCO Field Scale PS Conclusions

Based on field observations and laboratory analytical results of the final soil samples collected following ISCO operations in the Bravo Skim Pond TTZ, this technology can effectively achieve reductions in COC concentrations to the applicable criteria (LUT values or QAPP RLs, EPA Region 9 RSLs, and SRAM RBSLs), but reductions were observed only in 4 of 10 sample locations. It is unlikely that infiltration of the ISCO solution actually increased COC concentrations within the infiltration area; rather, these concentration increases likely are related to the heterogeneity of soil and COC distributions in the Bravo Area and the inherent variability associated with soil sampling results. Overall, these results suggest a lack of uniformity in the distribution of ISCO solution in the infiltration area, possibly due to variable permeability, soil grain size variability, and previously disturbed soil from burrowing animals. In other areas, the pH of the ISCO solution was not high enough after percolating through the soil column to activate the persulfate. From an efficacy standpoint, the challenges associated with uniform delivery during ISCO infiltration, as well as subsurface heterogeneity and variability, make this technology impractical for a full-scale operation at SSFL. Therefore, ISCO infiltration methods are not the most practical/feasible choice for ongoing remediation efforts for contaminated soil at SSFL.

## 12.6 SVE Conclusions

SVE is an in situ remedial technology designed to apply a vacuum to the soil within the treatment area to induce negative pressure and the controlled flow of soil gas toward the SVE wells for the purpose of removing VOCs from the soil. Based on well-documented studies and field applications, as well as NASA's bioventing study (see Section 10.5), SVE is a technology that is feasible at some locations throughout SSFL.

Dry, intrinsically coarse-grained soil with low proportions of silt and clay, the presence of volatile compounds with Henry's Law constant greater than $10^{-3}$ atm-$m^3$/mol (TCE, benzene, xylene, naphthalene, acetone, and so forth), and a competent pneumatic surface seal are all factors that lead to high degrees of success rates for SVE. Considering that some locations at SSFL conform to all of these factors, the expectation that SVE could meet the AOC cleanup requirements is reasonable to a high degree of confidence.

SECTION 13

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# Appendix A
# Hazen Soil Washing Bench Scale Report and Photographic Log

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# BENCH-SCALE WASHING OF SOILS FROM SANTA SUSANA FIELD LABORATORY IN VENTURA COUNTY, CALIFORNIA

Prepared for

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September 4, 2014

Copy No. _____
Hazen Project 11838

**BENCH-SCALE WASHING OF SOILS FROM SANTA SUSANA FIELD LABORATORY IN VENTURA COUNTY, CALIFORNIA**

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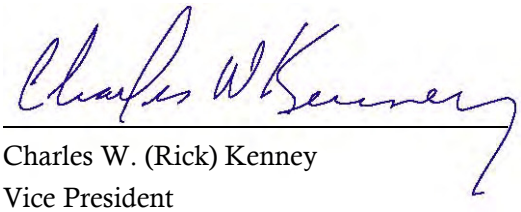

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## INTRODUCTION AND SUMMARY

On November 20, 2013, CH2M HILL authorized Hazen Research, Inc. to perform preliminary thermal desorption and soil washing experiments on contaminated soil from a spill site at Santa Susana Field Laboratory in Simi Valley, California. The purpose of the testing was to compare the relative efficiencies and costs of these technologies in treating the soil to meet target levels of residual contamination and to examine the benefits of surfactant addition at certain stages of the soil washing process. Thermal desorption testing and reporting was performed on the same soil under a separate contract with CH2M HILL.

In June 2013, Hazen received a request for proposal from CH2M HILL to perform the soil washing studies. The scope of work is in Appendix A. Hazen responded with Proposal 2013-108 (Revision 1) and a proposed work plan, also in Appendix A. CH2M HILL subsequently modified the scope of work task description to include dense media separation (elutriation) and time for a CH2M HILL representative to visit Hazen during treatment activities. Two additional scope changes were for process development during the dense media separation studies and for performing additional test work to provide sufficient material for analysis.

CH2M HILL contracted Calscience Environmental Laboratories, Inc. (Garden Grove, California) to be the primary laboratory to perform the analytical work for this project. Two quality control samples were sent to a secondary laboratory, EMAX (Torrance, California). Results were reported directly to CH2M HILL and are not included in this report. The analytical matrix and client sample numbers used by Hazen to ship samples to CalScience and EMAX are included in Appendix B.

Hazen received four samples in plastic coolers. The containers were labeled CDBS1045 and ABBS1018, and each number comprised a 0–5 ft and 5–10.9 ft deep sample. Soil washing tests were conducted on the CDBS1045 material, while thermal testing used the ABBS1018 material. The thermal work was conducted under Hazen Project 11827 and will be reported separately. The soils were brought in under Hazen's Plant Protection and Quarantine (PPQ) permit to move soil.

Soil from two drill holes provided the material for the soil washing work. The material from each hole divided into two depths, 0–5 ft, and 5–10.9 ft. The two 0–5 ft samples were combined and the two 5–10.9 ft samples were combined to generate two soil samples for testing.

Each soil sample was individually screened at $^{3}/_{8}$ in., and each plus $^{3}/_{8}$ in. fraction was individually stored. The minus $^{3}/_{8}$ in. material was combined, blended, and split into 1 kg charges that were used for subsequent soil washing.

Sample splits for each depth were dry screened at $^{1}/_{4}$ in. and 9 Tyler mesh. The sample fractions were weighed, split, and shipped to a third-party laboratory for analysis. Both samples contained predominately minus 9 mesh material.

Wet screening was conducted with $^{1}/_{4}$ in., 9 Tyler mesh, and 200 Tyler mesh material for both sample depths. The sample fractions were weighed, split, and shipped to a third-party laboratory for analysis. Both samples contained roughly 28% minus 200 mesh material.

Bulk density analysis was performed on samples for both compacted and loose soil. The loose bulk density for both samples was 61–62 lb/ft$^3$. Compacted density was higher for the deeper sample (81 lb/ft$^3$ compared with 75 lb/ft$^3$).

Ten kilograms of each sample were wet screened at 200 Tyler mesh to provide feed material for simulated trommel scrubbing, elutriation, and attrition scrubbing. The minus 200 mesh material was decanted and shipped to the third-party laboratory for analysis. The plus 200 mesh material was weighed and split for further testing.

Simulated trommel scrubbing was conducted in 5 L high-density polyethylene bottles with lids. Baffles were molded in the sides of the bottles to aid in agitation. The bottles were placed on a roller table for 30 min at 35% solids on a dry weight basis. Tests were conducted with 2 wt% Citrikleen and BioSolve Pinkwater solutions, as well as with only deionized (DI) water for splits from both sample depths. After scrubbing, the samples were filtered and screened at 200 mesh. The sample fractions were weighed, split, and shipped to a third-party laboratory for analysis.

Elutriation was performed on the plus 200 material using a Hazen designed and constructed water column. Initial attempts resulted in significant quantities of fine sands coming through with the overflow humic portion, while heavy organic material remained in the underflow. Several flow rates were attempted with similar results. Samples were further screened at 20 and 48 Tyler mesh and elutriation conducted on each fraction (plus 20, minus 20 by plus 48, and minus 48 mesh). The additional screening resulted in a decrease of fine sands in overflow fractions. The underflow fractions were composited and used as feed material for attrition scrubbing. Overflow and underflow sample fractions were weighed, split, and shipped to a third-party laboratory for analysis.

Attrition scrubbing was conducted with a protocol similar to that of trommel scrubbing. The elutriation underflow composites of both sample depths were scrubbed with water, Citrikleen, and BioSolve independently. The retention time in the scrubbing cell was 10 min. Streaks of black material, possibly organic, were observed on the sides of the attrition cell in the 0–5 ft sample washed with Citrikleen. This was the only test where this was observed. Foaming was observed in both tests run with BioSolve Pinkwater solutions. After scrubbing, the samples were filtered and wet screened at 200 mesh. Sample fractions were split and shipped to a third-party laboratory for analysis.

Additional sample was wet screened, trommel scrubbed, elutriated, and attrition scrubbed to provide additional minus 200 mesh 0–5 ft material for analysis.

## SOIL SAMPLES

On May 8 and 12, 2014, Hazen received 141 kg of organic and metal-contaminated soil from Santa Susana Field Laboratory located in Ventura County, California. The samples were received and assigned HRI 53934. The samples were shipped in plastic coolers. Five arrived on May 8, and the sixth and final cooler arrived on May 12, 2014. Initial sample labels, weights, and depths are included in Table 1. The sample received form is in Appendix C.

**Table 1. Initial Sample Labeling, Weights, and Depths of Received Material**

| HRI | Cooler No. | Weight, kg | Depth, ft | Client ID |
|---|---|---|---|---|
| 53934-0001 | 1 | 24.15 | 5–10.9 | CDBS1045 |
| 53934-0002 | 2 | 24.45 | 0-5 | ABBS1018 |
| 53934-0003 | 3 | 23.20 | 5-10.9 | CDBS1045 |
| 53934-0004 | 4 | 23.60 | 0-5 | CDBS1045 |
| 53934-0005 | 5 | 21.80 | 0-5 | CDBS1045 |
| 53934-0006 | 6 | 24.15 | 5–9.75 | ABBS1018 |

Samples labeled ABBS1018 were allocated for thermal treatment at Hazen (Project 11827), the results of which will be reported separately. Positioning a photo ionization detector over the solids resulted in maximum readings of 2.5–3.0 ppm organic vapor. There was a very distinct odor of diesel fuel when the sample bags were opened inside the coolers.

## INITIAL CHARACTERIZATION

The samples were initially screened, and material greater than $^{3}/_{8}$ in. was removed and weighed. A representative image of this material is in Figure 1.

**Figure 1. Plus $^{3}/_{8}$ in. Material Removed by Initial Screening**

Based on the lack of correlation in the weights of screened material between samples of the same depth, it was determined that the samples had been mislabeled. Coolers 1 and 5 had initially been labeled with depths 5–10.9 and 0–5 ft, respectively. After contacting the client, it was confirmed the reverse was actually true. The weights of the plus $^{3}/_{8}$ in. material are in Table 2.

**Table 2. Weights of Plus $^{3}/_{8}$ in. Material**

| HRI | Cooler No. | Weight, kg | Depth, ft | Plus $^{3}/_{8}$ in. | |
|---|---|---|---|---|---|
| | | | | g | wt % |
| 53934-0001 | 1 | 24.2 | 0–5 | 471 | 1.95 |
| 53934-0003 | 3 | 23.2 | 5–10.9 | 9.80 | 0.04 |
| 53934-0004 | 4 | 23.6 | 0–5 | 919 | 3.89 |
| 53934-0005 | 5 | 21.8 | 5–10.9 | X | X |

X denotes plus $^{3}/_{8}$ in. material from Cooler 5, which consisted of three roughly 0.5 in. rocks that were combined with the plus $^{3}/_{8}$ in. material from Cooler 4.

Differences in sample color were observed after initial screening, as shown in Figure 2. The figure is also representative of the minus $^{3}/_{8}$ in. material from both samples.

**Figure 2. Variation in Sample Color**

The Cooler 3 (5–10.9 ft) material was the only sample with the greenish color shown in Figure 2 (bucket on the right). Material from the remaining three coolers exhibited the reddish brown color, shown in the left bucket.

After initial screening to remove material larger than $^{3}/_{8}$ in., the samples were blended, homogenized, and split into 1 kg charges for both depths. Samples of both depths were sent to a third-party laboratory for analysis. Flowsheets outlining the experimental processes performed on the sample material are in Appendix D.

Individual charges for both sample depths were dry screened at $^1/_4$ in. and 9 Tyler mesh. The weights of each fraction were recorded, and samples were taken for third-party analyses. The results of the dry screening are shown in Table 3.

**Table 3. Initial Characterization Dry Screening Weight Distribution**

| Sample Depth, ft | Weight Distribution, % | | |
|---|---|---|---|
| | $^3/_8 \times {}^1/_4$ in. | $^1/_4$ in × 9 mesh | Minus 9 mesh |
| 0–5 | 0.9 | 7.4 | 91.7 |
| 5–10.9 | 0.0 | 1.4 | 98.6 |

Individual charges for both sample depths were wet screened at $^1/_4$ in. and 9 and 200 Tyler mesh. The weight and moisture content of each fraction were recorded, and samples were taken for third-party analyses. Weight percent was calculated for each fraction on a dry sample basis. The results of the wet screening are shown in Table 4. Data for dry and wet screening are in Appendix E.

**Table 4. Initial Characterization Wet Screening Weight Distribution**

| Sample Depth, ft | Weight Distribution, % | | | |
|---|---|---|---|---|
| | $^3/_8 \times {}^1/_4$ in. | $^1/_4$ in. × 9 mesh | 9 × 200 mesh | Minus 200 mesh |
| 0–5 | 0.5 | 6.5 | 61.4 | 31.7 |
| 5–10.9 | 0.0 | 1.1 | 67.1 | 31.8 |

Bulk density analyses were conducted on both sample depths. A 0.216 $ft^3$ plastic box was tared and filled with sample. The weight of sample was recorded as the loose bulk density. The box was then shaken, additional sample was added, and the procedure was repeated until the amount of sample occupied the maximum capacity of the box. The weight of maximum sample was recorded as the compacted bulk density. Results of the bulk density tests are included in Table 5. Data sheets for bulk density tests are in Appendix F.

**Table 5. Loose and Compacted Sample Bulk Densities**

| Sample Depth, ft | Bulk Density, $lb/ft^3$ | |
|---|---|---|
| | Loose | Compacted |
| 0–5 | 62.0 | 75.2 |
| 5–10.9 | 61.3 | 80.7 |

Laboratory-scale simulated trommel scrubbing was conducted on both sample depths using the 5 L high-density polyurethane carboys shown in Figure 3. Baffles were added to increase mixing efficiency by heating with a heat gun and indenting the plastic. The handles on the bottles were removed, and two strips of duct tape were placed around the top and bottom for additional friction with the rollers.

**Figure 3. Simulated Trommel Scrubbing Vessels**

Scrubbing tests were conducted at 40 wt% solids and the carboys were rolled for 30 min. Tests using 2 wt% Citrikleen and BioSolve Pinkwater solutions and DI only were conducted for each sample. After scrubbing, the samples were filtered and wet screened at 200 mesh. Samples were taken of both screened fractions and shipped for outside analysis. Additional tests on the 0–5 ft material were later conducted under the same parameters for the DI water and Citrikleen experiments to generate additional sample material for the third-party laboratory. A photograph of the scrubbing operations is shown in Figure 4. Data for the trommel scrubbing tests are in Appendix G.

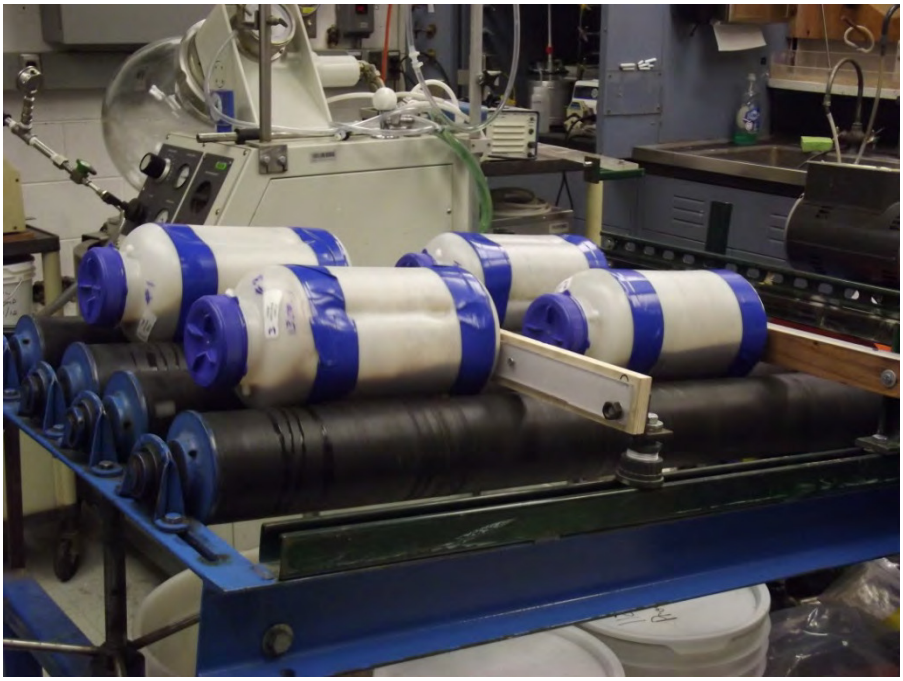


**Figure 4. Simulated Trommel Scrubbing Operations**

## ELUTRIATION

After initial screening, the minus $^{3}/_{8}$ in. by plus 200 mesh material was elutriated in a column. The column comprises two 6 in. diameter chambers separated by a slide valve. Upflow of water is controlled by valves, and the flow rate is adjustable. Lighter material is removed into an overflow fraction at the top of the column, while heavier material is collected as underflow. A photograph of the column is in Figure 5.

**Figure 5. Elutriation Column**

Initial tests resulted in poor removal of larger organic material at lower flow rates and significant quantities of fine particles in the overflow for higher flow rates. Lower flow rates resulted in coarse organic material being suspended in the center of the column and remaining in the underflow material. Higher flow rates removed organic material but also resulted in the loss of fine sand and small particle solids to the overflow. In order to provide a better separation of the humic organic fraction of the solid sample, additional screening was conducted. The samples were screened at 850 and 300 µm. The plus 850 µm material appeared to contain the majority of the organic material and solids larger than

$^{1}/_{4}$ in. The minus 300 µm material appeared to be mainly soil with a few fine organic particles. The minus 850, plus 300 µm size fraction was used as the feed for the elutriation tests, conducted at an 8 L/min flow rate. Additional screening resulted in more efficient separation of organic material during elutriation. Representative samples for each screened fraction and the resulting products are shown in Figures 5–9. Data sheets for the elutriation work are in Appendix H.

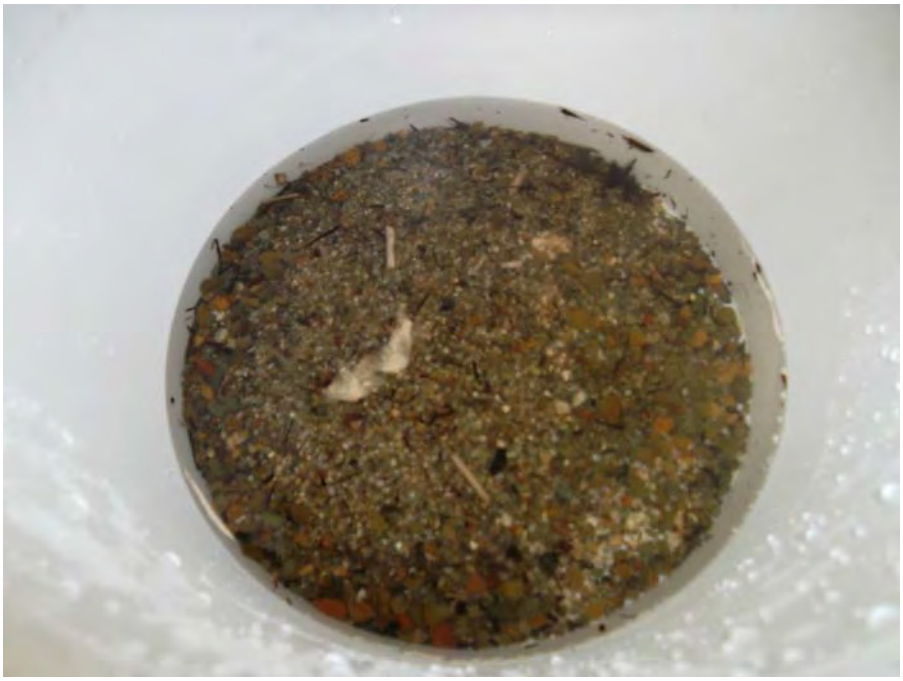


**Figure 6. Plus 850 µm Screened Material**

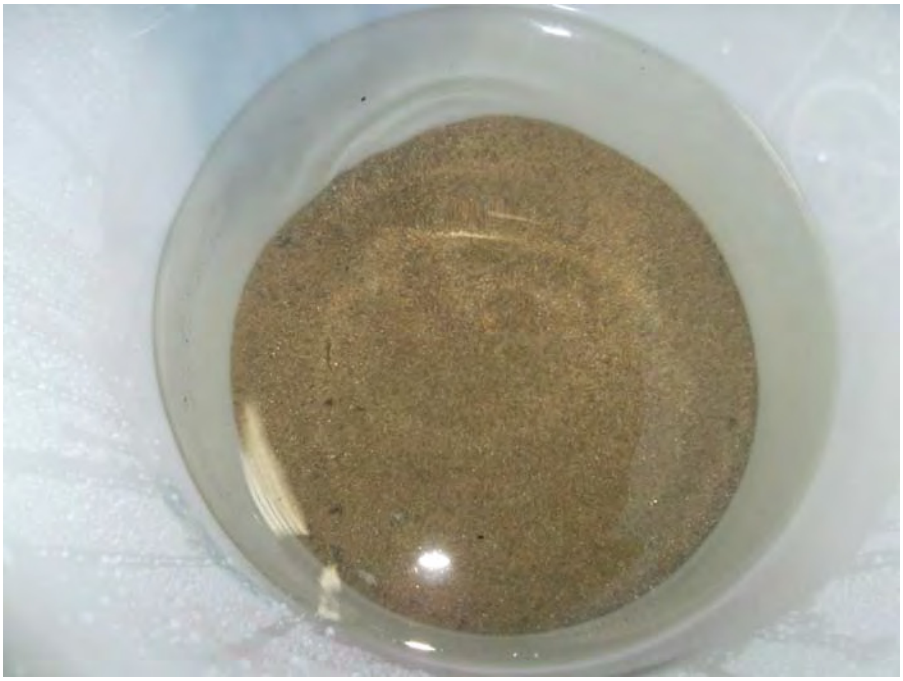


**Figure 7. Minus 850 µm by Plus 300 µm Elutriation Underflow Solids**

**Figure 8. Filtered Elutriation Overflow Solids**

**Figure 9. Minus 300 µm Screened Material**

Overflow solids from elutriation were filtered and weighed, and the moisture was calculated. The sample had a 56.5% moisture content. When calculated with the quantity of feed elutriated, this fraction accounted for less than 0.15% of the total material on a dry solids basis.

The underflow from the elutriation tests was composited with the minus 300 µm material and used as feed solids for attrition scrubbing tests. The plus 850 µm material and overflows were withheld and sampled.

## ATTRITION SCRUBBING

Attrition tests were conducted using a solids slurry (approximately 70% solids) loaded into an attrition cell equipped with a high-speed impeller that generates a high-shear mixing environment. During mixing, the solid particles collide with each other, with the desired effect that surface contaminants are "scrubbed" from the particles. The volume of the cell used was approximately 1 L. The cell and mixer are shown in Figure 10.

**Figure 10. Attrition Scrubbing Apparatus**

Three attrition scrubbing tests were performed on 0–5 ft and 5–10.9 ft samples with DI water, 2% Citrikleen and 2% BioSolve Pinkwater solutions. The samples were scrubbed for 10 min at an initial solids content of 70%. Additional water was added if incomplete mixing was observed at the bottom of the cell.

During the attrition scrubbing of the 0–5 ft sample with Citrikleen, black streaks were observed on the side on the cell. The black material appeared to be organic in nature, but this was not verified by analysis.

Tests of the 0–5 ft material with Citrikleen solutions were the only tests in the program to exhibit this phenomenon. A photograph of the black streaks is shown in Figure 11. Sample material from the same depth from a test with only DI water is shown in Figure 12 for comparison of a more representative test.

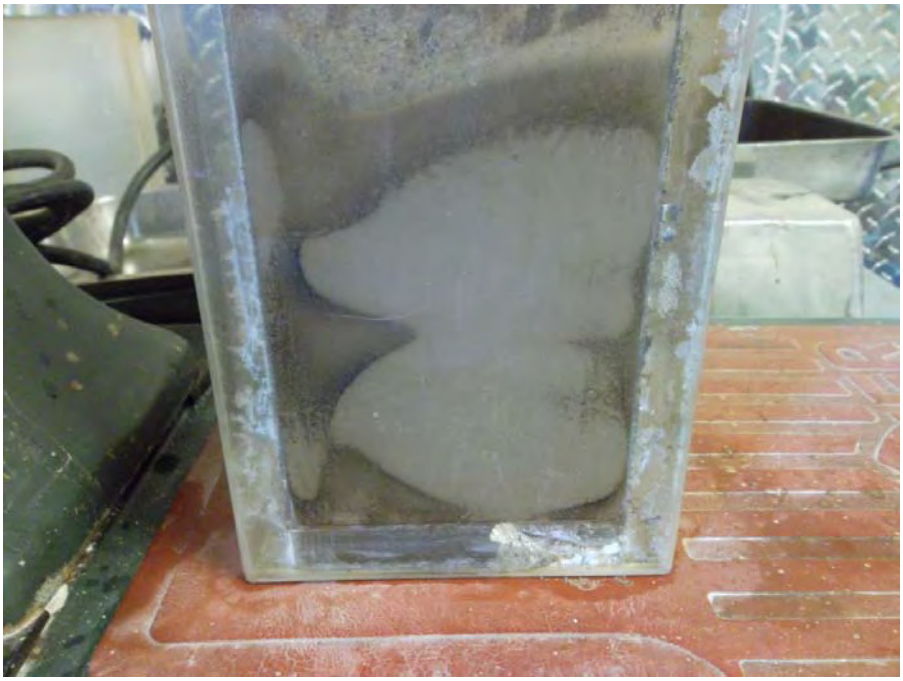


**Figure 11. Possible Organic Streaks in Attrition Scrubbing of 0–5 ft Material with Citrikleen**

**Figure 12. Attrition Scrubbing of 0–5 ft Material with DI Water**

Slight foaming at the top of the cell was observed in tests using BioSolve Pinkwater solutions but did not seem to affect the results. After attrition scrubbing, the samples were filtered and wet screened at 200 mesh. The minus 200 mesh material was filtered, and both fractions were sampled for third-party analysis. Data for the attrition scrubbing are in Appendix I.

Additional attrition scrubbing was conducted on the 0–5 ft material with water and Citrikleen solution to procure additional sample material for the third-party laboratory, Calscience, as well as an additional lab, EMAX, for quality control.

# APPENDIX A

## Scope of Work

HAZEN RESEARCH, INC.

4601 Indiana Street • Golden, Colorado 80403 USA
Phone: (303) 279-4501 • Fax: (303) 278-1528
www.hazenresearch.com

June 20, 2013

**E-mail Delivery**

Ms. Valerie Widgren
CH2M HILL/KNV
2095 Lakeside Centre Way, #200
Knoxville, TN 37922

Valerie.Widgren@ch2m.com

Subject: Solicitation No. CH500SW for Soils Washing Bench Scale Treatability Study
Hazen Proposal 2013-108 (Revision1)

Dear Ms. Widgren:

Hazen Research, Inc. is pleased to offer CH2M HILL our proposal to evaluate soil washing treatment of organic and metal contaminated soil from Santa Susana Field Laboratory located in Ventura County, California.

Our estimate for completing the program described under the program scope is $24,730. After reviewing the results of the initial soil characterization, CH2M HILL and Hazen may jointly revise the scope of work, which may result in changes to the estimate and schedule.

Any required sample analyses will be performed using a laboratory selected by CH2M HILL. Samples will be sent to the laboratory for analysis, and CH2M HILL will receive the results, and will also be billed directly. It is expected that CH2M HILL will make the analytical results available to Hazen to complete the soil washing evaluation.

## BACKGROUND AND OBJECTIVES

The purpose of this work is to perform a bench--scale soil-washing study to evaluate cleaning soil contaminated with organic compounds (including chlorinated organics, pesticides, PCB's, dioxins, and diesel range fuels) and metals that include cadmium and silver. All constituent concentrations are reported to be less than hazardous waste limits, both RCRA and California.

Soil washing technology is generally an aqueous/water based, volume reduction process whereby hazardous contaminants are extracted and concentrated into a small residual portion of the original volume using physical and chemical methods. The process concept may involve transfer of the contaminants from the soil or sediment to the wash water and their subsequent removal from the water. Cleaned coarse sand and gravel portions of the treated soil/sediment may be re-deposited on site or otherwise beneficially used as construction fill material onsite. The small volume of contaminated residual concentrate is subsequently treated by other destructive, immobilization, or disposal technologies such as:

- Incineration
- Low temperature thermal desorption
- Chemical extraction
- Dechlorination
- Biodegradation
- Solidification/stabilization
- Vitrification
- Regulated disposal

The physical techniques that are typically employed by any soil/sediment washing technology include crushing/resizing, screening, wet classification, attrition scrubbing, dense media separation, heavy media separation, elutriation, dissolved air flotation, gravity separation and mechanical dewatering. Associated chemical additives include detergents, surfactants, chelating agents, solvents, coagulants, flocculants and pH adjustment.

Hazen is proposing that the initial evaluation be comprised of possible crushing/resizing, dry screening, wet classification, both light (trommel) and heavy (attrition) scrubbing with and without chemical additives, and mechanical dewatering.

## PROGRAM SCOPE

The scope of work consists of the implementation of a bench-scale soil washing study on soil samples collected from two depths. CH2M HILL will collect the two samples and deliver them to Hazen. The soils are anticipated to be moist and loose silty sands with 70% fine sand 30% fines. Analytical concentrations of the soil to be tested as part of the treatability study are anticipated to be similar to the concentrations listed below in Table 1. The objective of the testing is to remove the varied parameters in soil to required cleanup concentrations. Hazen requests that about 5-gallons of each soil be provided.

**Table 1. Expected Analytical Concentrations in the Soils**

| CDBS1045 | | | | |
|---|---|---|---|---|
| Sample Depth | Parameter Name | Concentration | Q | Unit |
| 0 - 1 | Aroclor 1254 | 0.018 | = | mg/Kg |
| 0 - 1 | Cadmium | 0.586 | = | mg/Kg |
| 0 - 1 | Diesel Range Organics (C20-C30) | 75 | = | mg/Kg |
| 0 - 1 | DIOXTEQM | 17.3594 | = | pg/g |
| 0 - 1 | Endosulfan Sulfate | 0.0006 | = | mg/Kg |
| 0 - 1 | Silver | 0.477 | = | mg/Kg |
| 10 - 11 | Aroclor 1260 | 0.016 | = | mg/Kg |
| 10 - 11 | Dieldrin | 0.0011 | = | mg/Kg |
| 10 - 11 | Diesel Range Organics (C20-C30) | 88 | = | mg/Kg |
| 5 - 6 | Diesel Range Organics (C20-C30) | 51 | = | mg/Kg |

The final soil clean up levels are still being evaluated, however they should be similar to current values listed in Enclosure 1 (Attachment 2 with the RFP).

The purpose of the test program is to collect sufficient data to establish the ability of soil washing to achieve the treatment goals. Hazen will make recommendations on the potential need for additional testing at the bench-scale or pilot-scale level.

The scope of work will include shipping the material to be tested, material preparation and characterization, testing, sample collection, chemical analysis, interpretation of the results, report preparation, and decommissioning. Bench-scale testing will be performed. If successful and requested, a proposal may be provided for pilot scale testing. Chemical analyses will be performed at an analytical laboratory designated by CH2M HILL.

The scope of work has been divided into six tasks.

## TASK 1. PROJECT MANAGEMENT, SCHEDULE, ENGINEERING, AND SAFETY

CH2M HILL will coordinate packaging and shipping the test materials from the site. One 5-gallon bucket of each soil is requested. Hazen will treat and package the material after testing and arrange for disposal according to directions from CH2M HILL.

## TASK 2. SAMPLE RECEIPT, IDENTIFICATION, AND ANALYSIS

Two soil samples representing material from two depths are expected, both contaminated with organic compounds and metals, principally cadmium and silver. The soils are reported to be about 70% fine sand and 30% fines.

Material preparation will consist of blending to homogenize the feed, screening at 2 inches and at ⅜ inch to remove stones and trash, if necessary, and sampling. The screen sizes used for characterization and the soil washing tests may be adjusted after the soils are received and inspected. Some screen sizes may be eliminated or others combined in order to ensure sufficient material for performing the analytical work. An Organic Vapor Analyzer (OVA) will be used to monitor potential volatile emissions during all phases of testing.

Characterization of each feed sample will include sampling the combined feed and analysis for the following analytes: bulk density (ASTM D2937); percent moisture (ASTM D2216); soil pH (EPA 150.1), VOCs (Method 8260B), TPH (C08 to C30 using Method 8015B), cadmium and silver (Method 6020), and PCBs (Aroclor 1254 and Aroclor 1260 using Method 8082), Total Organic Carbon (TOC), and DIOXTEQM (Dioxin Toxicity Equivalent for Mammals using Method 8290).

## TASK 3. SOILS WASHING BENCH SCALE SYSTEMS PREPARATION

Metals typically reside in the fines fraction of contaminated soil. In some cases, most of the contamination can be removed by a simple screening process. Dry screening (on a trommel screen for example) can be used to separate fines smaller than ¼ inch, depending on the physical characteristics of the soil (moisture, oil, clay content, etc.). Screening at smaller mesh sizes is usually performed wet to prevent blinding the screen.

The purpose of the size separation testing will be to determine if the contamination can be isolated in a small fraction (less than 25%) of the soil by size separation and to measure the composition of the clean soil and concentrated soil produced. The work will consist of dry separation, followed by wet screening and (if necessary) washing, to improve the size separation.

Tests of unit operations (screening, attrition scrubbing, dewatering, etc.) will be conducted at the bench-scale level. The results of these tests will be used to construct a conceptual process flow diagram and material balance that identifies the equipment required and the process flow rates for the size separation process.

It is anticipated there will be three size fractions generated from the screening process:

- Oversize (plus ⅜ or plus ¼ inch)
- Coarse soil (plus 100 or plus 200 mesh)

- Fine soil (minus 100 or minus 200 mesh)

The actual screen sizes used will depend on visual examination at the time of testing.

The oversize fraction will be visually inspected to verify that it does not contain waste debris.

The coarse fraction will be washed to determine if any remaining contaminants can be reduced to target levels. Two washing methods will be tested. Low-energy washing will be conducted by slurrying the coarse fraction with water at 30 to 35% solids in an agitated beaker. High-energy washing will be conducted by scrubbing the coarse fraction in a 1 liter attrition scrubber cell attached to a laboratory flotation machine at about 70% solids and diluting the pulp to between 30 and 35% solids after scrubbing. Both methods will be tested with and without surfactant addition.

The treated soils will be separated from the liquids by filtration on a Buchner funnel. The soils will be rinsed with two bed volumes of fresh water and then prepared for analysis of bulk density, percent moisture (ASTM D2216); VOCs (Method 8260B), TPH (C08 to C30 using Method 8015B), cadmium and silver (Method 6020), PCBs (Aroclor 1254 and Aroclor 1260 using Method 8082), and DIOXTEQM (Dioxin Toxicity Equivalent for Mammals using Method 8290).
.

The filtrates will be analyzed for VOCs (Method 8260B), TPH (C08 to C30 using Method 8015B), cadmium and silver (Method 6020), PCBs (Aroclor 1254 and Aroclor 1260 using Method 8082), DIOXTEQM (Dioxin Toxicity Equivalent for Mammals using Method 8290), and Total Suspended Solids.

The fine fractions will be filtered on a Buchner funnel to generate a filter cake and filtrate, both the filter cakes and the filtrates will be analyzed for the same suite of analyses as above.

## TASK 4. CONCEPTUAL SOILS WASHING TREATABILITY EVALUATION

A conceptual process flow diagram and material balance will be prepared depicting the size separation process. The flow diagram can be a simple box diagram showing the principle equipment to be used and the process and waste streams. The material balance will include flow rates and compositions of all major process and waste streams.

## TASK 5. CLEANUP AND DECOMMISSIONING

Hazen will return all unused samples and residuals to the site of sample origin within 60 days of the conclusion of the program, unless the client makes other arrangements. Our estimated charges for this project include sample disposal costs.

### TASK 6. DATA EVALUATION, REPORT PREPARATION AND CLOSURE

Hazen will furnish CH2M HILL with a detailed report within 4 weeks after completion of testing and receipt of analytical data. The report will describe the testing equipment and procedures, document all data (including mass balances) generated during the operation, provide our observations, and present our findings and recommendations. Throughout the project, Hazen will apprise CH2M HILL and their authorized representatives of our progress through informal fax, email, or oral reports. CH2M HILL representatives are welcome to visit Hazen and witness the testing.

## RELATED CONSIDERATIONS

### ENVIRONMENTAL, HEALTH, AND SAFETY

The program will be conducted in compliance with the policies and procedures detailed in the Hazen Safety Manual. Throughout the program, health and safety will be monitored by Mr. Steve Flaniken, CIH, Hazen's Manager of Health, Safety, and Environmental Affairs.

### PERSONNEL

Hazen will provide the project management and technical services to ensure that the project is completed efficiently and safely according to the stated project plan. The program will be managed and coordinated under the direction of Mr. Charles W. Kenney. Mr. Kenney will report to the designated CH2M HILL representative and will serve as Hazen's primary contact with CH2M HILL and their representatives throughout the project. Mr. Kenney will supervise the test work and will participate in the development of process concepts. Hazen project engineers and technicians will be assigned to the project team at the time the contract is awarded.

## SCHEDULE

Hazen estimates that completion of the entire program will require approximately 6 to 9 weeks from the date that CH2M HILL and Hazen agree to a start date and after the contaminated soils are delivered to Hazen. This schedule includes approximately 1 to 2 weeks for setup and soil characterization, 1 to 2 weeks for bench-scale testing, and 4 to 5 weeks for receipt of analytical results, data reduction, and report preparation. This schedule assumes that all operations will be performed on the day shift.

## ESTIMATED CHARGES

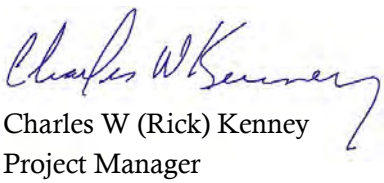
The firm-fixed price estimate for completing the proposed scope of work on a normal turnaround schedule for sample analyses is $24,730. The estimate covers project management, labor, and materials for sample receipt and preparation; performance of the specified soil washing testing; sampling; quality control; reporting; and, health and safety. A breakdown of estimated costs for normal turnaround is provided in Table 2, which is attached as Enclosure 2. Our estimate will be valid for 90 calendar days from the issue date.

## AGREEMENT EXCEPTIONS AND REPRESENTATIONS AND CERTIFICATIONS

Hazen has reviewed the solicitation and associated attachments, including the Scope of Work (Attachment A) and subcontract for Professional Services (Attachment D). Exceptions to these documents are noted in Enclosure 3. Representations and Certifications are in Enclosure 4.

Please contact me with any questions. Thank you for considering Hazen for this project.

Sincerely,



Charles W (Rick) Kenney
Project Manager

Enclosures

xc: Olivia Edwards, CH2M HILL (Olivia.edwards@ch2m.com)
Dennis Johnson, Hazen Research, Inc.

# ENCLOSURE 1

**RFP Attachment 2**
SSFL Required Soil Cleanup Concentrations
Soil Washing Bench-Scale Study, Target Analytes
*NASA SSFL, CH500 Proposal*

| Method | Group | ParameterName | Concentration | Units |
|---|---|---|---|---|
| SW8290 | Dioxins[1] | DIOXTEQM | 0.84 | pg/g |
| SW6020 | Metal | Cadmium | 0.579 | mg/Kg |
| SW6020 | Metal | Silver | 0.138 | mg/Kg |
| SW8270C-SIM | PAH | 1-Methylnaphthalene | 0.02 | mg/Kg |
| SW8270C-SIM | PAH | 2-Methylnaphthalene | 0.02 | mg/Kg |
| SW8270C-SIM | PAH | Acenaphthene | 0.02 | mg/Kg |
| SW8270C-SIM | PAH | Acenaphthylene | 0.00114 | mg/Kg |
| SW8270C-SIM | PAH | Anthracene | 0.00075 | mg/Kg |
| SW8270C-SIM | PAH | Benzo(a)anthracene | 0.001566 | mg/Kg |
| SW8270C-SIM | PAH | Benzo(a)pyrene | 0.0023 | mg/Kg |
| SW8270C-SIM | PAH | Benzo(b)fluoranthene | 0.005015 | mg/Kg |
| SW8270C-SIM | PAH | Benzo(ghi)perylene | 0.001507 | mg/Kg |
| SW8270C-SIM | PAH | Benzo(k)fluoranthene | 0.00529 | mg/Kg |
| SW8270C-SIM | PHTH | Bis(2-ethylhexyl)phthalate | 0.0398 | mg/Kg |
| SW8270C-SIM | PHTH | Butyl benzyl phthalate | 0.0326 | mg/Kg |
| SW8270C-SIM | PAH | Chrysene | 0.003544 | mg/Kg |
| SW8270C-SIM | PHTH | Di-n-butyl phthalate | 0.00848 | mg/Kg |
| SW8270C-SIM | PHTH | Di-n-octtyl phthalate | 0.00645 | mg/Kg |
| SW8270C-SIM | PAH | Dibenzo(a,h)anthracene | 0.00123 | mg/Kg |
| SW8270C-SIM | PHTH | Diethyl phthalate | 0.02 | mg/Kg |
| SW8270C-SIM | PHTH | Dimethyl phthalate | 0.02 | mg/Kg |
| SW8270C-SIM | PAH | Fluoranthene | 0.003455 | mg/Kg |
| SW8270C-SIM | PAH | Fluorene | 0.002516 | mg/Kg |
| SW8270C-SIM | PAH | Indeno(1,2,3-cd)pyrene | 0.000835 | mg/Kg |
| SW8270C-SIM | SVOC | n-Nitrosodimethylamine | 0.02 | mg/Kg |
| SW8270C-SIM | PAH | Naphthalene | 0.00162 | mg/Kg |
| SW8270C-SIM | PAH | PAHTEQM | 0.004 | mg/Kg |
| SW8270C-SIM | PAH | Phenanthrene | 0.002635 | mg/Kg |
| SW8270C-SIM | PAH | Pyrene | 0.00376 | mg/Kg |
| SW8082 | PCB | Aroclor 1016 | 0.015 | mg/Kg |
| SW8082 | PCB | Aroclor 1221 | 0.015 | mg/Kg |
| SW8082 | PCB | Aroclor 1232 | 0.015 | mg/Kg |
| SW8082 | PCB | Aroclor 1242 | 0.015 | mg/Kg |
| SW8082 | PCB | Aroclor 1248 | 0.015 | mg/Kg |
| SW8082 | PCB | Aroclor 1254 | 0.015 | mg/Kg |
| SW8082 | PCB | Aroclor 1260 | 0.015 | mg/Kg |
| SW8082 | PCB | Aroclor 1262 | 0.05 | mg/Kg |
| SW8082 | PCB | Aroclor 1268 | 0.05 | mg/Kg |
| SW8082 | PCB | PCBTEQM | 6.5131 | pg/g |
| SW8081 | Pesticide | 4,4'-DDD | 0.000258 | mg/Kg |
| SW8081 | Pesticide | 4,4'-DDE | 0.006466 | mg/Kg |
| SW8081 | Pesticide | 4,4'-DDT | 0.009655 | mg/Kg |
| SW8081 | Pesticide | Aldrin | 0.005 | mg/Kg |
| SW8081 | Pesticide | Alpha-BHC | 0.005 | mg/Kg |
| SW8081 | Pesticide | Beta-BHC | 0.000169 | mg/Kg |
| SW8081 | Pesticide | Chlordane (Technical) | 0.01 | mg/Kg |
| SW8081 | Pesticide | Delta-BHC | 0.000164 | mg/Kg |
| SW8081 | Pesticide | Dieldrin | 0.000166 | mg/Kg |
| SW8081 | Pesticide | Endosulfan I | 0.000107 | mg/Kg |
| SW8081 | Pesticide | Endosulfan II | 0.000304 | mg/Kg |
| SW8081 | Pesticide | Endosulfan Sulfate | 0.000251 | mg/Kg |
| SW8081 | Pesticide | Endrin | 0.000207 | mg/Kg |
| SW8081 | Pesticide | Endrin Aldehyde | 0.000547 | mg/Kg |
| SW8081 | Pesticide | Endrin ketone | 0.000491 | mg/Kg |
| SW8081 | Pesticide | gamma-BHC | 0.0000717 | mg/Kg |
| SW8081 | Pesticide | Heptachlor | 0.000142 | mg/Kg |
| SW8081 | Pesticide | Heptachlor Epoxide | 0.000156 | mg/Kg |
| SW8081 | Pesticide | Methoxychlor | 0.001 | mg/Kg |
| SW8081 | Pesticide | Toxaphene | 0.05 | mg/Kg |
| SW8015B | TPH[2] | EFH (C8-C11) | 5 | mg/Kg |
| SW8015B | TPH[2] | EFH (C12-C14) | 5 | mg/Kg |
| SW8015B | TPH[2] | EFH (C15-C20) | 5 | mg/Kg |
| SW8015B | TPH[2] | EFH (C21-C30) | 5 | mg/Kg |
| SW8015B | TPH[2] | GRO (C4-C12) | 5 | mg/Kg |
| SW8015B | TPH[2] | ORO (C31-C40) | 5 | mg/Kg |
| SW8015B | TPH[2] | TOTAL EFH(C8-C40) | 5 | mg/Kg |

**Notes**
DIOXTEQM - Dioxin Toxicity Equivalent for Mammals
TEQ - Toxicity Equivalent
pg/g - picogram per gram, dry weight
PAH - Polynuclear Aromatic Hydrocarbons
mg/Kg - milligram per kilogram, dry weight
PHTH - Phthalate (6 constituents analyzed with the PAHs via SW8270-SIM per the *Quality Assurance Project Plan* [QAPP] [MEC$^x$, 2009])
SVOC - Semi-Voliatile Organic Compounds (one SVOC analyzed with the PAHs suite via SW8270-SIM per the QAPP)
PCB - Polychlorinated Biphenyls
TPH - Total Petroleum Hydrocarbons
EFH - Extractable Fuel Hydrocarbons (Diesel Range Organics)
GRO - Gasoline Range Organics
ORO - Oil Range Organics
[1] - Dioxin congeners analyzed under SW8290/1613, only the dioxin TEQ value for mammals is used for evaluation
[2] - TPH carbon groupings currently used per the QAPP

ENCLOSURE 2

## Table 2. Estimated Costs for Soil Washing Study

| Task No. | Task Description | Estimated Costs, $ | | | |
|---|---|---|---|---|---|
| | | Labor | Other | Analytical | Total |
| 1 | **Project Management, Schedule, Engineering, and Safety** | | | | |
| | • Safety, management, and engineering | 740 | | | 700 |
| | • Schedule and budget controls | 740 | | | 700 |
| | • Safety meeting and monitoring for systems operation | 740 | | | 700 |
| | • Submit a work plan to CH2M HILL prior to soil sample collection, summarizing the proposed test method details and laboratory analyses and including a detailed schedule for completion of the scope of work. | 1,700 | | | 1,700 |
| | **Subtotal Project Management, Schedule, Engineering, and Safety** | **3,920** | **0** | **0** | **3,800** |
| 2 | **Sample Receipt, Log In, and Preparation** | | | | |
| | • Receive, log, and photograph the test soils samples (2 sample depths total). | 700 | 250 | | 1,000 |
| | • Specify the total volume of soil required to complete the scope of work. | 0 | | | 0 |
| | • Specify the proposed method for obtaining the representative aliquots and the quantity for each aliquot (in grams). | 0 | | | 0 |
| | • Measure particle size distribution, pH, bulk density, Total Organic Carbon | 540 | | | 500 |
| | • Laboratory analyze each sample for: VOC's using Method 8560B, TPH (C08 to C30) using Method 8015B, antimony and silver using Method 6020, and PCBs (Aroclor 1254 and Aroclor 1260). Laboratory analyses must be able to detect and report concentrations at or below the cleanup concentrations specified in Attachment 2. Laboratory EDD reports will be provided to CH2M HILL for validation. Specify the proposed number of sampled and associated matrix required for analysis for the duration of the testing. | 1,190 | 300 | | 1,500 |
| | **Subtotal Sample Receipt, Log In, and Preparation** | **2,430** | **550** | **0** | **3,000** |
| 3 | **Soils Washing Bench Scale Systems Preparation** | | | | |
| | • A description of the equipment proposed for the treatability study shall be included in the proposal. Describe the proposed test equipment and any auxiliary equipment. | 530 | | | 500 |
| | • At a minimum, the equipment listed below (or its equivalent) should be utilized for the treatability study. | 530 | | | 500 |
| | °Wet Sieve Screens | 170 | | | 200 |
| | °Attrition Scrubbing Cell | 170 | | | 200 |
| | °Dewatering Filter (representative of belf filter or plate & frame dewatering). | 170 | | | 200 |
| | **Subtotal Soils Washing Bench Scale Systems Preparation** | **1,570** | **0** | **0** | **1,600** |
| 4 | **Conceptual Soils Washing Treatability Evaluation** | | | | |
| | • Screen out any +3/8 inch material and work only with the -3/8 inch material to accommodate analysis by SW846 methods. Dependent upon the mass of the +3/8 inch fraction, this material may be analyzed after crushing to -3/8 inch nominal size; | 330 | | | 330 |
| | • Blend and split the -3/8" material into working size samples; | 330 | | | 300 |
| | • Analyze a head sample for the Contaminants of Concern (CoC), moisture content, bulk density and Total Organic Carbon (TOC); | 160 | | | 200 |
| | • Perform a dry screen analysis on selected screen sizes and analyze the fractions for the CoC to provide indication if an initial dry screening will concentrate contaminants and perhaps yield a coarse fraction that will not require further processing; | 480 | | | 500 |
| | • Perform a wet screen analysis on the same screen sizes and analyze the fraction for the CoC for comparison with the dry screen results. Use of either a MultiRAE or Organic Vapor Analyzer (OVA) to monitor potential volatile emissions within screen breaks; | 930 | | | 900 |
| | • Perform simulated wet trommel scrubbing (light agitation) both with and without a surfactant, screen at one or two sizes and analyze the fractions for CoC. Use of either a MultiRAE or Organic Vapor Analyzer (OVA) to monitor potential volatile emissions within screen breaks; | 660 | | | 700 |
| | • Perform wet attrition scrubbing (heavy agitation) both with and without a surfactant, screen at one or two sizes and analyze the fractions for components of interest. Use of either a MultiRAE or Organic Vapor Analyzer (OVA) to monitor potential volatile emissions within screen breaks; | 660 | | | 700 |
| | • Dewatering of fines fractions (i.e., 63 mm) from wash solution and analyze the solids for moisture content, bulk density, CoC. Measure pressate water for Total Suspended Solids and solubilized CoC. | 670 | | | 700 |
| | • Report results all the above work to with preliminary indication that the application of full-scale soil washing with water & additives may be successful in meeting the current clean-up levels and is cost-effective permitting the clean soil fraction to be returned to the site. Make recommendations for supplemental pilot-scale demonstration, if necessary, based on these results. Provided a ROM budgetary price for potential supplemental pilot-scale operations. Provide a ROM budgetary price for the provision and operation of a full-scale (i.e., >75 tph) soils washing system. | 2,860 | | | 2,900 |
| | **Subtotal Conceptual Soils Washing Treatability Evaluation** | **7,080** | **0** | **0** | **7,230** |
| 5 | **Cleanup and Decommissioning** | | | | |
| | • Includes disassembly, cleaning and restoration to pre-project condition | 1,040 | 1,000 | | 2,000 |
| | • Return or approved disposal of project residuals and debris | 1,040 | 1,000 | | 2,000 |
| | **Subtotal Cleanup and Decommissioning** | **2,080** | **2,000** | **0** | **4,000** |
| 6 | **Data Evaluation, Report Preparation, and Closure** | | | | |
| | • Summary report describing the equipment used (including a process flow diagram); methodology; testing parameters; results, including tables and graphics summarizing pre-and post-treatment soil contaminant concentrations; mass balance comparing the initial mass of contaminants in soil with the post-treatment mass of contaminants in residue, and recommendations for the next step, which is anticipated to be pilot testing that is capable of developing the information required for development of a design and cost for full-scale treatment. | 4,440 | 0 | 0 | 4,400 |
| | • Contractor is to provide electronic digital photo/video documentation of bench-scale soils washing operations. Electronic files are to be provided on an acceptable external drive mechanism; | 730 | 0 | 0 | 700 |
| | **Subtotal Data Evaluation, Report Preparation, and Closure** | **5,170** | **0** | **0** | **5,100** |
| | **Total Estimate of Charges** | **22,250** | **2,550** | **0** | **24,730** |

CH2MHILL

# AGREEMENT EXCEPTIONS

NOTICE: Offerors must provide exceptions to the proposed subcontract with their offer. If the offeror has no exceptions, please write "None" below.

The following exceptions are noted:

Attachment A - Scope of Work

1. Item 7.0 in the SOW implies that Hazen's invoices will be paid after CH2M Hill is paid by NASA. Hazen expects to be paid within 45 d of receipt of its invoice by CH2M Hill (see Item 1 below under Attachment D).

Attachment D – Subcontract for Professional Services

1. Article 1. Terms of Payment, Subarticle 1.2 Progress Payments

   Hazen does not offer cash discounts. Replace the first sentence of this subsection with the following: "Payment will be made by CH2M HILL within 45 days for the approved invoice amount, less any retainage by CLIENT, less any retainage specified elsewhere in this SUBCONTRACT."

2. Article 2, Subarticle 2.4.2

   Omit "(b) and" from the sentence. Hazen does not use personal, commercial or rented vehicles nor does our insurance allow additional insureds named in the certificate.

3. Article 2, Subarticle 2.4.3

   Omit "(b)" from the sentence. Hazen does not use personal, commercial or rented vehicles nor does our insurance allow waivers of subrogation for clients.

4. Article 2, Subarticle 2.4.5

   Amend the last sentence as follows: "SUBCONTRACTOR shall provide CH2M HILL with thirty (30) days prior written notice of any cancellation, non-renewal, or reduction of limits or coverage."

| **NAME AND ADDRESS OF OFFEROR** | **NAME OF SIGNER** |
|---|---|
| Hazen Research, Inc.<br>4601 Indiana Street<br>Golden, CO 80403 | Charles W. (Rick) Kenney |
| | **TITLE OF SIGNER**<br>Vice President |
| **OFFEROR** *(Signature of person authorized to sign)*<br>Charles W Kenney | **DATE**<br>June 20, 2013 |

ENCLOSURE 4

# Representations and Certifications

**Name of Submitting Organization:** **Hazen Research, Inc.**

CH2M HILL is performing this work under a U.S. Federal Government prime contract. This prime contract requires CH2M HILL to obtain certain information and certifications from your organization. The information requested is in accordance with the Federal Acquisition Regulation (FAR), available at https://www.acquisition.gov/far/, and the related sections of the FAR are cited for your reference. You are required to fully complete the appropriate sections of this form and return the ***signed and dated original*** to CH2M HILL with your offer. The Representations and Certifications must be signed by an individual that has authority to commit your organization. An award to your organization cannot be made until this document is completed, signed and received at the appropriate CH2M HILL office. Your cooperation is greatly appreciated.

***Instructions:***

**The Representations and Certifications contain six (6) parts. Based upon the amount of your offer, complete the following sections and sign the signature page:**

***$3,000 to $24,999 — Complete Section I.***

***$25,000 to $99,999 — Complete Sections I and II.***

***$100,000 to $649,000 — Complete Sections I through III.***

***$650,000 to $999,999 — Complete Sections I through IV.***

***$1,000,000 to $4,999,999 — Complete Sections I through V.***

***$5,000,000 and above — Complete entire document.***

The offeror represents and certifies as part of its offer that: (*Check or complete all applicable items*.)

## SECTION I *Complete Section 1 for offers $3,000 to $24,999*

**1. Small Business Program Representations (FAR 52.219-1, modified) (Apr 2012)**

(a) (1) The North American Industry Classification System (NAICS) code and description for this acquisition is 541380 – Testing Laboratories.

(2) The small business size standard is $14.0 ☒ U.S. Dollars ☐ employees.

(3) The small business size standard for a concern which submits an offer in its own name, other than on a construction or service contract, but which proposes to furnish a product which it did not itself manufacture, is 500 employees.

(b) Representations.

(1) The offeror represents as part of its offer that it ☐ is ■ is not a small business concern.

(2) *Complete only if offeror represented itself as a small business concern in (b)(1), above. The* offeror represents, for general statistical purposes, that it ☐ is ☐ is not a small disadvantaged business concern as defined in 13 CFR 124.1002.

(3) *Complete only if offeror represented itself as a small business concern in (b)(1), above.* The offeror represents as part of its offer that it ☐ is ☐ is not a women-owned small business concern.

(4) *Complete only if offeror represented itself as a small business concern in (b)(1), above.* The offeror represents as part of its offer that it ☐ is ☐ is not a veteran-owned small business concern.

(5) *Complete only if offeror represented itself as a veteran-owned small business concern in (b)(4), above.* The offeror represents as part of its offer that it ☐ is ☐ is not a service-disabled veteran-owned small business concern.

(6) *Complete only if offeror represented itself as a small business concern in paragraph (b)(1), above*.

☐ Is ☐ is not a HUBZone small business concern listed, on the date of this representation, on the List of Qualified HUBZone Small Business Concerns maintained by the Small Business Administration, and no material change in ownership and control, principal office, or HUBZone employee percentage have occurred since it was certified by the Small Business Administration in accordance with 13 CFR part 126; and

☐ Is ☐ is not a joint venture that complies with the requirements of 13 CFR part 126, and the representation in paragraph (b)(6) above of this provision is accurate for each HUBZone small business concern participating in the HUBZone joint venture. *The offeror shall enter the names of each of the HUBZone small business concerns participating in the HUBZone joint venture*:
_____. Each HUBZone small business concern participating in the HUBZone joint venture shall submit a separate signed copy of the HUBZone representation.

(7) *Complete only if offeror is an Alaskan Native Corporation as defined by 43 U.S.C. 1626(e)(2) or an Indian Tribe as defined by 25 U.S.C. 1452(c).*

☐ Is ☐ is not an Alaskan Native Corporation or Indian Tribe that is certified by the Small Business Administration as a Small Disadvantaged Business.

(8) *Complete only if offeror is an Alaskan Native Corporation as defined by 43 U.S.C. 1626(e)(2) or an Indian Tribe as defined by 25 U.S.C. 1452(c).*

☐ Is ☐ is not an Alaskan Native Corporation or Indian Tribe Small Business.

(9) *Complete only if offeror represented itself as disadvantaged in paragraph (b)(2), above.* The offeror shall check the category in which its ownership falls:.

☐ Black American.

☐ Hispanic American.

☐ Native American (American Indians, Eskimos, Aleuts, or Native Hawaiians).

☐ Asian-Pacific American (persons with origins from Burma, Thailand, Malaysia, Indonesia, Singapore, Brunei, Japan, China, Taiwan, Laos, Cambodia, (Kampuchea), Vietnam, Korea, The Philippines, U.S. Trust Territory of the Pacific Islands (Republic of Palau), Republic of the Marshall Islands, Federated States of Micronesia, the Commonwealth of the Northern Mariana Islands, Guam, Samoa, Macao, Hong Kong, Fiji, Tonga, Kiribati, Tuvalu, or Nauru).

☐ Subcontinent Asian (Asian-Indian) American (persons with origins from India, Pakistan, Bangladesh, Sri Lanka, Bhutan, the Maldives Islands, or Nepal).

☐ Individual/concern, other than one of the preceding.

(c) Definitions:

"Service-disabled veteran-owned small business concern"-

(1) Means a small business concern-

(i) Not less than 51 percent of which is owned by one or more service-disabled veterans or, in the case of any publicly owned business, not less than 51 percent of the stock of which is owned by one or more service-disabled veterans; and

(ii) The management and daily business operations of which are controlled by one or more service-disabled veterans or, in the case of a service-disabled veteran with permanent and severe disability, the spouse or permanent caregiver of such veteran.

(2) Service-disabled veteran means a veteran, as defined in 38 U.S.C. 101(2), with a disability that is service-connected, as defined in 38 U.S.C. 101(16).

"Small business concern" means a concern, including its affiliates, that is independently owned and operated, not dominant in the field of operation in which it is bidding on Government contracts, and qualified as a small business under the criteria in 13 CFR part 121 and the size standard in paragraph (a) of this provision.

“Small disadvantaged business concern”, which is fully defined at 13 CFR 124.1002, generally means a “socially and economically disadvantaged” individual(s) under the Small Business Act (15 USC 637) who is either-

(1) Socially disadvantaged individuals are those who have been subjected to racial or ethnic prejudice or cultural bias because of their identity as a member of a group without regard to their individual qualities.

(2) Economically disadvantaged individuals are those socially disadvantaged individuals whose ability to compete in the free enterprise system has been impaired due to diminished capital and credit opportunities as compared to others in the same business area who are not socially disadvantaged. In determining the degree of diminished credit and capital opportunities the Administration shall consider, but not be limited to, the assets and net worth of such socially disadvantaged individual.

This designation extends only to socially and economically disadvantaged U.S. citizens, or those who have been lawfully admitted permanent U.S. residency. Individuals not mentioned in the act may be considered on a case-by-case basis. Individuals specifically mentioned include Black Americans, Hispanic Americans regardless of race, culture, or origin, Asian-Pacific Americans and Subcontinent Asian Americans and Native Americans including Native Hawaiians, Eskimos, Aleuts, and American Indians.

"Veteran-owned small business concern" means a small business concern-

(1) Not less than 51 percent of which is owned by one or more veterans (as defined at 38 U.S.C. 101(2)) or, in the case of any publicly owned business, not less than 51 percent of the stock of which is owned by one or more veterans; and

(2) The management and daily business operations of which are controlled by one or more veterans.

"Alaska Native Corporation (ANC)" means any Regional Corporation, Village Corporation, Urban Corporation, or Group Corporation organized under the laws of the State of Alaska in accordance with the Alaska Native Claims Settlement Act, as amended (43 U.S.C.A. 1601, et seq.) and which is considered a minority and economically disadvantaged concern under the criteria at 43 U.S.C. 1626(e)(1). This definition also includes ANC direct and indirect subsidiary corporations, joint ventures, and partnerships that meet the requirements of 43 U.S.C. 1626(e)(2).

"Indian tribe" means any Indian tribe, band, group, pueblo, or community, including native villages and native groups (including corporations organized by Kenai, Juneau, Sitka, and Kodiak) as defined in the Alaska Native Claims Settlement Act (43 U.S.C.A. 1601 et seq.), that is recognized by the Federal Government as eligible for services from the Bureau of Indian Affairs in accordance with 25 U.S.C. 1452(c). This definition also includes Indian-owned economic enterprises that meet the requirements of 25 U.S.C. 1452(e).

"Women-owned small business concern" means a small business concern-

(1) That is at least 51 percent owned by one or more women; or, in the case of any publicly owned business, at least 51 percent of the stock of which is owned by one or more women; and

(2) Whose management and daily business operations are controlled by one or more women.

(d) Notice.

Under 15 U.S.C. 645(d), any person who misrepresents a firm's status as a business concern that is small, HUBZone small, small disadvantaged, service-disabled veteran-owned small, or women-owned small eligible under the WOSB Program in order to obtain a contract to be awarded under the preference programs established pursuant to section 8, 9, 15, 31, or 36 of the Small Business Act or any other provision of the Federal law that specifically references section 8(d) for a definition of program eligibility, shall— (i) Be punished by imposition of fine, imprisonment, or both; (ii) Be subject to administrative remedies, including suspension and debarment; and (iii) Be ineligible for participation in programs conducted under the authority of the Act.

**2. Historically Black College or University and Minority Institution Representation (FAR 52.226-2) (Oct 2008)**

(a) Definitions. As used in this provision—

"Historically black college or university" means an institution determined by the Secretary of Education to meet the requirements of 34 CFR 608.2. For the Department of Defense, the National Aeronautics and Space Administration, and the Coast Guard, the term also includes any nonprofit research institution that was an integral part of such a college or university before November 14, 1986.

"Minority institution" means an institution of higher education meeting the requirements of Section 365(3) of the Higher Education Act of 1965 (20 U.S.C. 1067k), including a Hispanic-serving institution of higher education, as defined in Section 502(a) of the Act (20 U.S.C. 1101a).

(b) Representation. The offeror represents that it—

☐ is ■ is not a historically black college or university;

☐ is ■ is not a minority institution.

**3. Taxpayer Identification (FAR 52.204-3) (Oct 1998)**

All offerors must submit the information required in paragraphs (a) through (c) of this provision to comply with debt collection requirements of 31 U.S.C. 7701(c) and 3325(d), reporting requirements of 26 U.S.C. 6041, 6041A, and 6050M, and implementing regulations issued by the IRS. If the resulting contract is subject to the payment reporting requirements described in Federal Acquisition Regulation (FAR) 4.904, the failure or refusal by the offeror to furnish the information may result in a 31 percent reduction of payments otherwise due under the contract.

The TIN may be used by the Government to collect and report on any delinquent amounts arising out of the offeror's relationship with the Government (31 U.S.C. 7701(c)(3)). If the resulting contract is subject to the payment reporting requirements described in FAR 4.904, the TIN provided hereunder may be matched with IRS records to verify the accuracy of the offeror's TIN.

The offeror, by checking the appropriate box, represents the following:

(a) Taxpayer Identification Number (TIN).

■ TIN: 84-0511412.

☐ TIN has been applied for.

☐ TIN is not required because: _____

☐ Offeror is a nonresident alien, foreign corporation, or foreign partnership that does not have income effectively connected with the conduct of a trade or business in the United States and does not have an office or place of business or a fiscal paying agent in the United States;

☐ Offeror is an agency or instrumentality of a foreign government;

☐ Offeror is an agency or instrumentality of the Federal Government.

(b) Type of organization.

| | | | |
|---|---|---|---|
| | Sole Proprietorship | | Government entity (Federal, State, or local) |
| | Partnership | | Foreign government |
| | Corporate entity (not tax-exempt) | X | International organizations per 26 CFR 1.6049-4 |
| | Corporate entity (tax-exempt) | | Other |

(c) D-U-N-S Number. 04-874-2175.

*NOTE TO OFFEROR: DUNS number and name of the offeror (i.e., Legal Business Name of Organization under Signature/Certification at the end of this form) must match the offeror's DUNS record which must be accurate and current.*

(d) Common parent.

■ Offeror is not owned or controlled by a common parent;

☐ Name and TIN of common parent:

Name _____.

TIN _____.

D-U-N-S: _____.

*NOTE TO OFFEROR: DUNS number and name of common parent must match the offeror's DUNS record which must be accurate and current.*

(e) Definitions:

"Common parent," as used in this provision, means that corporate entity that owns or controls an affiliated group of corporations that files its Federal income tax returns on a consolidated basis, and of which the offeror is a member.

"Taxpayer Identification Number (TIN)," as used in this provision, means the number required by the Internal Revenue Service (IRS) to be used by the offeror in reporting income tax and other returns. The TIN may be either a Social Security Number or an Employer Identification Number.

"D-U-N-S Number (D-U-N-S)", as used in this provision, means the Data Universal Numbering System or D-U-N-S® Number which is a unique nine-digit identification number that identifies business entities on a location-specific basis. The D-U-N-S is widely used by both commercial and Federal entities and was adopted as the standard business identifier for Federal electronic commerce in October 1994. The D-U-N-S was also incorporated into the Federal Acquisition Regulation (FAR) in April 1998 as the Federal Government's contractor identification code for all procurement-related activities. D-U-N-S Number assignment is free for all businesses required to register with the US Federal government for contracts or grants. Refer to http://fedgov.dnb.com/webform to create a D-U-N-S Number if one does not exist for your business location.

**4. Prohibition of Segregated Facilities (FAR 52.222-21) (Feb 1999)**

(a) "Segregated facilities" as used in this provision, means any waiting rooms, work areas, rest rooms and wash rooms, restaurants and other eating areas, time clocks, locker rooms and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing facilities provided for employees, that are segregated by explicit directive or are in fact segregated on the basis of race, color, religion, or national origin because of written or oral policies or employee custom. The term does not include separate or single-user restrooms or necessary dressing or sleeping areas provided to assure privacy between sexes.

(b) The offeror agrees that it does not and will not maintain or provide for its employees any segregated facilities at any of its establishments and that it does not and will not permit its employees to perform their services at any location under its control where segregated facilities are maintained. The offeror agrees that a breach of this clause is a violation of the Equal Opportunity clause in this contract.

(c) The offeror shall include this clause in every subcontract and purchase order that is subject to the Equal Opportunity clause of this contract.

**5. Previous Contracts and Compliance Reports (FAR 52.222-22) (Feb 1999)**

The offeror represents that:

(a) ■ It has, ☐ has not, participated in a previous contract or subcontract subject to the Equal Opportunity clause of this solicitation;

(b) ■ It has, ☐ has not, filed all required compliance reports (***note that if no reports were required, mark "has" filed all reports***); and

(c) Representations indicating submission of required compliance reports, signed by proposed subcontractors, will be obtained before subcontract awards.

## ENCLOSURE 4

**6. Affirmative Action Compliance (FAR 52.222-25) (Apr 1984)**

The offeror represents that it: *(Complete either item (a) or (b) only;* ***do not complete both (a) and (b)).***

(a) ■ Has developed and has on file, or ☐ has not developed and does not have on file, at each establishment, affirmative action programs required by the rules and regulations of the Secretary of Labor (41 CFR 60-1 and 60-2), or

(b) ☐ Has not previously had contracts subject to the written affirmative action programs requirement of the rules and regulations of the Secretary of Labor.

**7. Buy American Act Certificate.** (Applies only if the clause at FAR 52.225-1, Buy American Act—Supplies, is included in this solicitation.)

(a) The offeror certifies that each end product, except those listed in paragraph (b) of this provision, is a domestic end product and that for other than COTS items, the offeror has considered components of unknown origin to have been mined, produced, or manufactured outside the United States. The offeror shall list as foreign end products those end products manufactured in the United States that do not qualify as domestic end products, i.e., an end product that is not a COTS item and does not meet the component test in paragraph (2) of the definition of "domestic end product." The terms "commercially available off-the-shelf (COTS) item" "component," "domestic end product," "end product," "foreign end product," and "United States" are defined in the clause of this solicitation entitled "Buy American Act—Supplies."

(b) Foreign End Products:

| Line Item No. | Country of Origin |
|---|---|
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| | |

[List as necessary]

**8. Buy American Act—Free Trade Agreements—Israeli Trade Act Certificate.** *(Applies only if the clause at FAR 52.225-3, Buy American Act—FreeTrade Agreements—Israeli Trade Act, is included in this solicitation.)*

(a) The offeror certifies that each end product, except those listed in paragraph (b) or (c) of this provision, is a domestic end product and that for other than COTS items, the offeror has considered components of unknown origin to have been mined, produced, or manufactured outside the United States. The terms "Bahrainian, Moroccan, Omani, Panamanian, or Peruvian end product," "commercially available off-the-shelf (COTS) item," "component," "domestic end product," "end product," "foreign end product," "Free Trade Agreement country," "Free Trade Agreement country end product," "Israeli end product," and "United States" are defined in the clause of this solicitation entitled "Buy American Act—Free Trade Agreements—Israeli Trade Act."

(b) The offeror certifies that the following supplies are Free Trade Agreement country end products (other than Bahrainian, Moroccan, Omani, Panamanian, or Peruvian end products) or Israeli end products as defined in the clause of this solicitation entitled "Buy American Act—Free Trade Agreements—Israeli Trade Act":

Free Trade Agreement Country End Products (Other than Bahrainian, Moroccan, Omani, Panamanian, or Peruvian End Products) or Israeli End Products:

| Line Item No. | Country of Origin |
|---|---|
| | |
| | |
| | |

[List as necessary]

(c) The offeror shall list those supplies that are foreign end products (other than those listed in paragraph (b) of this provision) as defined in the clause of this solicitation entitled "Buy American Act—Free Trade Agreements—Israeli Trade Act." The offeror shall list as other foreign end products those end products manufactured in the United States that do not qualify as domestic end products, *i.e.*, an end product that is not a COTS item and does not meet the component test in paragraph (2) of the definition of "domestic end product."

Other Foreign End Products:

| Line Item No. | Country of Origin |
|---|---|
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| | |

[List as necessary]

(d) CH2M HILL will evaluate offers in accordance with the policies and procedures of Part 25 of the Federal Acquisition Regulation.

(e) Buy American Act—Free Trade Agreements—Israeli Trade Act Certificate, Alternate I (Jan 2004). If Alternate I to the clause at FAR 52.225-3 is included in this solicitation, substitute the following paragraph (b) for paragraph (b) of the basic provision:

(b) The offeror certifies that the following supplies are Canadian end products as defined in the clause of this solicitation entitled "Buy American Act—Free Trade Agreements—Israeli Trade Act":

Canadian End Products:

Line Item No.

_____

_____

_____

[List as necessary]

(f) Buy American Act—Free Trade Agreements—Israeli Trade Act Certificate, Alternate II (Jan 2004). If Alternate II to the clause at FAR 52.225-3 is included in this solicitation, substitute the following paragraph (b) for paragraph (b) of the basic provision:

(b) The offeror certifies that the following supplies are Canadian end products or Israeli end products as defined in the clause of this solicitation entitled “Buy American Act—Free Trade Agreements—Israeli Trade Act”:

Canadian or Israeli End Products:

| Line Item No. | Country of Origin |
|---|---|
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[List as necessary]

(g) Buy American Act—Free Trade Agreements—Israeli Trade Act Certificate, Alternate III (Nov 2012). If Alternate III to the clause at FAR 52.225-3 is included in this solicitation, substitute the following paragraph (b) for paragraph (b) of the basic provision:

(b) The offeror certifies that the following supplies are Free Trade Agreement country end products (other than Bahrainian, Korean, Moroccan, Omani, Panamanian, or Peruvian end products) or Israeli end products as defined in the clause of this solicitation entitled “Buy American Act—Free Trade Agreements—Israeli Trade Act”:

Free Trade Agreement Country End Products (Other than Bahrainian, Korean, Moroccan, Omani, Panamanian, or Peruvian End Products) or Israeli End Products:

| Line Item No. | Country of Origin |
|---|---|
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[List as necessary]

**9. Trade Agreements Certificate**. *(Applies only if the clause at FAR 52.225-5, Trade Agreements, is included in this solicitation.)*

(a) The offeror certifies that each end product, except those listed in paragraph (b) of this provision, is a U.S.-made or designated country end product, as defined in the clause of this solicitation entitled “Trade Agreements.”

(b) The offeror shall list as other end products those end products that are not U.S.-made or designated country end products.

Other End Products:

| Line Item No. | Country of Origin |
|---|---|
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| | |

[List as necessary]

(c) CH2M HILL will evaluate offers in accordance with the policies and procedures of FAR Part 25. For line items covered by the WTO GPA, CH2M HILL will evaluate offers of U.S.-made or designated country end products without regard to the restrictions of the Buy American Act. CH2M HILL will consider for award only offers of U.S.-made or designated country end products unless the Subcontract Administrator determines that there are no offers for such products or that the offers for such products are insufficient to fulfill the requirements of the solicitation.

## ENCLOSURE 4

**10. Buy American Statute-Balance of Payments Program Certificate.** *(Applies only if the clause at DFAR 252.225-7001, Buy American and Balance of Payments Program clause is included in this solicitation.)*

(a) *Definitions.* "Commercially available off-the-shelf (COTS) item," "component," "domestic end product," "foreign end product," "qualifying country," "qualifying country end product," and "United States" have the meanings given in the Buy American Act and Balance of Payments Program clause of this solicitation.

(b) *Evaluation.* CH2M HILL (i) will evaluate offers in accordance with the policies and procedures of Part 225 of the Defense Federal Acquisition Regulation Supplement; and (ii) will evaluate offers of qualifying country end products without regard to the restrictions of the Buy American statute or the Balance of Payments Program.

(c) *Certifications and identification of country of origin.*

(1) For all line items subject to the Buy American and Balance of Payments Program clause of this solicitation, the offeror certifies that—(A) Each end product, except those listed in paragraphs (c)(2) or (3) of this provision, is a domestic end product; and (B) For end products other than COTS items, components of unknown origin are considered to have been mined, produced, or manufactured outside the United States or a qualifying country.

(2) The offeror certifies that the following end products are qualifying country end products:

| Line Item No. | Country of Origin |
|---|---|
| | |
| | |
| | |

[List as necessary]

(3) The following end products are other foreign end products, including end products manufactured in the United States that do not qualify as domestic end products, i.e., an end product that is not a COTS item and does not meet the component test in paragraph (ii) of the definition of "domestic end product":

| Line Item No. | Country of Origin |
|---|---|
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| | |

[List as necessary]

**11. Trade Agreements Certificate.** *(Applies only if the clause at DFAR 252.225-7021, Trade Agreements clause is included in this solicitation.)*

(a) Definitions. "Designated country end product, "nondesignated country end product," "qualifying country end product," and U.S.-made end product" have the meanings given in the Trade Agreements clause of this solicitation.

(b) Evaluation. CH2M HILL (1) will evaluate offers in accordance with the policies and procedures of Part 225 of the Defense Federal Acquisition Regulation Supplement; and (2) will consider only offers of end products that are U.S.-made, qualifying country, or designated country end products unless—(i) there are no offers of such end products; (ii) the offers of such end products are insufficient to fulfill the Government's requirements; or (iii) a national interest waiver has been granted.

(c) Certification and identification of country of origin.

(1) For all line items subject to the Trade Agreements clause of this solicitation, the offeror certifies that each end product to be delivered under this contract, except those listed in paragraph (c)(2) of this provision, is a U.S.-made, qualifying country, or designated country end product.

(2) The following supplies are other nondesignated country end products:

| Line Item No. | Country of Origin |
|---|---|
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| | |
| | |

[List as necessary]

**12. Trade Agreements Certificate—Inclusion of Iraqi End Products.** *(Applies only if Alternate I of the clause at DFAR 252.225-7021, Trade Agreements clause is included in this solicitation.)*

(a) Definitions. "Designated country end product, "Iraqi end product," "nondesignated country end product," "qualifying country end product," and "U.S.-made end product" have the meanings given in the Trade Agreements clause of this solicitation.

(b) Evaluation. CH2M HILL (1) will evaluate offers in accordance with the policies and procedures of Part 225 of the Defense Federal Acquisition Regulation Supplement; and (2) will consider only offers of end products that are U.S.-made, qualifying country, Iraqi, or designated country end products unless—(i) there are no offers of such end

products; (ii) the offers of such end products are insufficient to fulfill the Government's requirements; or (iii) a national interest waiver has been granted.

(c) Certification and identification of country of origin.

(1) For all line items subject to the Trade Agreements clause of this solicitation, the offeror certifies that each end product to be delivered under a contract resulting from this solicitation, except those listed in paragraph (c)(2) of this provision, is a U.S.-made, qualifying country, Iraqi, or designated country end product.

(2) The following supplies are other nondesignated country end products:

| Line Item No. | Country of Origin |
|---|---|
| | |
| | |
| | |

[List as necessary]

**13. Buy American—Free Trade Agreements—Balance of Payments Program Certificate.** *(Applies only if the clause at DFAR 252.225-7036, Buy American—Free Trade Agreements—Balance of Payments Program clause is included in this solicitation.)*

(a) Definitions. "Bahrainian end product," "commercially available off-the-shelf (COTS) item," "component," "domestic end product," "Free Trade Agreement country," "Free Trade Agreement country end product," "foreign end product," "Moroccan end product," "Panamanian end product," "Peruvian end product," "qualifying country end product," and "United States," as used in this provision, have the meanings given in the Buy American—Free Trade Agreements—Balance of Payments Program clause of this solicitation.

(b) CH2M HILL (1) will evaluate offers in accordance with the policies and procedures of Part 225 of the Defense Federal Acquisition Regulation Supplement; and (2) for line items subject to Free Trade Agreements, will evaluate offers of qualifying country end products or Free Trade Agreement country end products other than Bahrainian end products, Moroccan end products, Panamanian end products, or Peruvian end products without regard to the restrictions of the Buy American or the Balance of Payments Program.

(c) Cerfifications and identification of country of origin.

(1) For all line items subject to the Buy American—Free Trade Agreements—Balance of Payments Program clause of this solicitation, the offeror certifies that— (i) each end product, except the end products listed in paragraph (c)(2) of this provision, is a domestic end products; and (ii) components of unknown origin are considered to have been mined, produced, or manufactured outside the United States or a qualifying country.

(2) The offeror shall identify all end products that are not domestic end products.

(A) The offeror certifies that the following supplies are qualifying country (except Australian or Canadian) end products:

| Line Item No. | Country of Origin |
|---|---|
| | |
| | |
| | |

[List as necessary]

(B) The offeror certifies that the following supplies are Free Trade Agreement country end products other than Bahrainian end products, Moroccan end products, Panamanian end products, or Peruvian end products:

| Line Item No. | Country of Origin |
|---|---|
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| | |

[List as necessary]

(C) The following supplies are other foreign end products, including end products manufactured in the United States that do not qualify as domestic end products, i.e., an end product that is not a COTS item and does not meet the component test in paragraph (ii) of the definition of "domestic end product":

| Line Item No. | Country of Origin |
|---|---|
| | |
| | |
| | |

[List as necessary]

(d) Buy American—Free Trade Agreements—Balance of Payments Program Certificate, Alternate I (Nov 2012). *(Applies only if Alternate I of the clause at DFAR 252.225-7036, Buy American—Free Trade Agreements—Balance of Payments Program clause is included in this solicitation.)*

As prescribed in 225.1101(10)(ii), substitute the phrase "Canadian end product" for the phrases "Bahrainian end product," "Free Trade Agreement country," "Free Trade Agreement country end product," "Moroccan end product," "Panamanian end product," and "Peruvian end products" in paragraph (a) of the basic provision; substitute the phrase "Canadian end products" for the phrase "Free Trade Agreement country end products other than Bahrainian end products, Moroccan end products, or Peruvian end products" in paragraphs (b)(2) and (c)(2)(ii) of the basic provision; and delete the phrase "Australian or" from paragraph (c)(2)(i) of the basic provision.

(e) Buy American—Free Trade Agreements—Balance of Payments Program Certificate, Alternate II (Nov 2012). *(Applies only if Alternate II of the clause at DFAR 252.225-7036, Buy American—Free Trade Agreements—Balance of Payments Program clause is included in this solicitation.)*

As prescribed in 225.1101(10)(iii), add the terms "South Caucasus/Central and South Asian (SC/CASA) state" and "South Caucasus/Central and South Asian (SC/CASA) state end product" in paragraph (a) and substitute the following paragraphs (b)(2) and (c)(2)(i) for paragraphs (b)(2) and (c)(2)(i) of the basic clause.

(b)(2) For line items subject to Free Trade Agreements, will evaluate offers of qualifying country end products, SC/CASA state end products, or Free Trade Agreement country end products other than Bahrainian end products, Moroccan end products, Panamanian end products, or Peruvian end products without regard to the restrictions of the Buy American or the Balance of Payments Program.

(c)(2)(i) The offeror certifies that the following supplies are qualifying country (except Australian or Canadian) or SC/CASA state end products:

| Line Item No. | Country of Origin |
|---|---|
| _____ | _____ |
| _____ | _____ |
| _____ | _____ |

[List as necessary]

(f) Buy American—Free Trade Agreements—Balance of Payments Program Certificate, Alternate III (Jun 2012). *(Applies only if Alternate III of the clause at DFAR 252.225-7036, Buy American—Free Trade Agreements—Balance of Payments Program clause is included in this solicitation.)*

As prescribed in 225.1101(10)(iv), substitute the following paragraphs (a), (b)(2), (c)(2)(i), and (c)(2)(ii) for paragraphs (a), (b)(2), (c)(2)(i), and (c)(2)(ii) of the basic clause:

(a) *Definitions.* "Canadian end product," "commercially available off-the-shelf (COTS) item," "domestic end product," "foreign end product," "qualifying country end product," "South Caucasus/Central and South Asian (SC/CASA) state end product," and "United States" have the meanings given in the Buy American—Free Trade Agreements—Balance of Payments Program clause of this solicitation.

(b)(2) For line items subject to Free Trade Agreements, will evaluate offers of qualifying country end products, SC/CASA state end products, or Canadian end products without regard to the restrictions of the Buy American or the Balance of Payments Program.

(c)(2)(i) The offeror certifies that the following supplies are qualifying country (except Canadian) or SC/CASA state end products:

| Line Item No. | Country of Origin |
|---|---|
| _____ | _____ |
| _____ | _____ |
| _____ | _____ |

[List as necessary]

(ii) The offeror certifies that the following supplies are Canadian end products:

| Line Item No. | Country of Origin |
|---|---|
| _____ | _____ |
| _____ | _____ |
| _____ | _____ |

[List as necessary]

(g) Buy American—Free Trade Agreements—Balance of Payments Program Certificate, Alternate IV (Nov 2012). *(Applies only if Alternate IV of the clause at DFAR 252.225-7036, Buy American—Free Trade Agreements—Balance of Payments Program clause is included in this solicitation.)*

As prescribed in 225.1101(10)(v), add a definition of "Korean end product" in paragraph (a) of the basic provision; substitute the phrase "Free Trade Agreement country end products other than Bahrainian end products, Korean

end products, Moroccan end products, Panamanian end products, or Peruvian end products" for the phrase "Free Trade Agreement country end products other than Bahrainian end products, Moroccan end products, Panamanian end products, or Peruvian end products" in paragraphs (b)(2) and (c)(2)(ii) of the basic provision.

(h) Buy American—Free Trade Agreements—Balance of Payments Program Certificate, Alternate V (Nov 2012). *(Applies only if Alternate V of the clause at DFAR 252.225-7036, Buy American—Free Trade Agreements—Balance of Payments Program clause is included in this solicitation.)*

As prescribed in 225.1101(10)(vi), substitute the following paragraphs (a), (b)(2), (c)(2)(i), and (c)(2)(ii) for paragraphs (a), (b)(2), (c)(2)(i), and (c)(2)(ii) of the basic clause:

(a) *Definitions.* "Bahrainian end product," "commercially available off-the-shelf (COTS) item," "component," "domestic end product," "Free Trade Agreement country," "Free Trade Agreement country end product," "foreign end product," "Korean end product," "Moroccan end product," "Panamanian end product," "Peruvian end product," "qualifying country end product," "South Caucasus/Central and South Asian (SC/CASA) state end product," and "United States," as used in this provision, have the meanings given in the Buy American Act—Free Trade Agreements—Balance of Payments Program clause of this solicitation.

(b)(2) For line items subject to Free Trade Agreements, will evaluate offers of qualifying country end products, SC/CASA state end products, or Free Trade Agreement end products other than Bahrainian end products, Korean end products, Moroccan end products, Panamanian end products, or Peruvian end products without regard to the restrictions of the Buy American Act or the Balance of Payments Program.

(c)(2)(i) The offeror certifies that the following supplies are qualifying country (except Australian or Canadian) or SC/CASA state end products:

| Line Item No. | Country of Origin |
|---|---|
| | |
| | |
| | |

[List as necessary]

(ii) The offeror certifies that the following supplies are Free Trade Agreement country end products other than Bahrainian end products, Korean end products, Moroccan end products, Panamanian end products, or Peruvian end products:

| Line Item No. | Country of Origin |
|---|---|
| | |
| | |
| | |

[List as necessary]

**14. Conflict of Interest**

The offeror represents by signing below that:

To the best of its knowledge and belief, there are no relevant facts or circumstances which could give rise to a potential or actual personal or organizational conflict of interest by offeror's employees, suppliers, subcontractors, consultants, or contingent staffing in performing under any resulting Agreement, Subcontract or Purchase Order. A Conflict of Interest is defined as a relationship between the offeror and/or an employee, supplier, subcontractor, consultant, or contingent staff of that Subcontractor and another entity or individual including an employee or relative of an employee of CH2M HILL that may impair the objectivity of the offeror, employee, supplier, subcontractor, consultant, or contingent staff in performing the scope of work.

**15. Prohibition on Contracting With Entities Engaging in Certain Activities or Transactions Relating to Iran—Representation and Certifications (FAR 52.225-25) (Dec 2012)**

(a) Definitions. As used in this provision—
Person—
(1) Means—
(i) A natural person;
(ii) A corporation, business association, partnership, society, trust, financial institution, insurer, underwriter, guarantor, and any other business organization, any other nongovernmental entity, organization, or group, and any governmental entity operating as a business enterprise; and
(iii) Any successor to any entity described in paragraph (1)(ii) of this definition; and

(2) Does not include a government or governmental entity that is not operating as a business enterprise.

Sensitive technology—
(1) Means hardware, software, telecommunications equipment, or any other technology that is to be used specifically—
(i) To restrict the free flow of unbiased information in Iran; or
(ii) To disrupt, monitor, or otherwise restrict speech of the people of Iran; and

(2) Does not include information or informational materials the export of which the President does not have the authority to regulate or prohibit pursuant to section 203(b)(3) of the International Emergency Economic Powers Act (50 U.S.C. 1702(b)(3)).

(b) The offeror shall email questions concerning sensitive technology to the Department of State at CISADA106@state.gov.

(c) Except as provided in paragraph (d) of this provision or if a waiver has been granted in accordance with 25.703-4, by submission of its offer, the offeror—

(1) Represents, to the best of its knowledge and belief, that the offeror does not export any sensitive technology to the government of Iran or any entities or individuals owned or controlled by, or acting on behalf or at the direction of, the government of Iran;

(2) Certifies that the offeror, or any person owned or controlled by the offeror, does not engage in any activities for which sanctions may be imposed under section 5 of the Iran Sanctions Act. These sanctioned activities are in the areas of development of the petroleum resources of Iran, production of refined petroleum products in Iran, sale and provision of refined petroleum products to Iran, and contributing to Iran's ability to acquire or develop certain weapons or technologies; and

(3) Certifies that the offeror, and any person owned or controlled by the offeror, does not knowingly engage in any transaction that exceeds $3,000 with Iran's Revolutionary Guard Corps or any of its officials, agents, or affiliates, the property and interests in property of which are blocked pursuant to the International Emergency Economic Powers Act (50 U.S.C. 1701 *et seq.)* (see OFAC's Specially Designated Nationals and Blocked Persons List at http://www.treasury.gov/ofac/downloads/t11sdn.pdf).

(d) Exception for trade agreements. The representation requirement of paragraph (c)(1) and the certification requirement of paragraph (c)(2) and (c)(3) of this provision do not apply if—

(1) This solicitation includes a trade agreements notice or certification (e.g., 52.225-4, 52.225-6, 52.225-12, 52.225-24, or comparable agency provision); and

(2) The offeror has certified that all the offered products to be supplied are designated country end products or designated country construction material.

**16. Prohibition on Conducting Restricted Business Operations in Sudan—Certification (FAR 52.225-20) (Aug 2009)**

(a) *Definitions*. As used in this provision—

"Business operations" means engaging in commerce in any form, including by acquiring, developing, maintaining, owning, selling, possessing, leasing, or operating equipment, facilities, personnel, products, services, personal property, real property, or any other apparatus of business or commerce.

"Marginalized populations of Sudan" means—

(1) Adversely affected groups in regions authorized to receive assistance under section 8(c) of the Darfur Peace and Accountability Act (Pub. L. 109-344) (50 U.S.C. 1701 note); and

(2) Marginalized areas in Northern Sudan described in section 4(9) of such Act.

"Restricted business operations" means business operations in Sudan that include power production activities, mineral extraction activities, oil-related activities, or the production of military equipment, as those terms are defined in the Sudan Accountability and Divestment Act of 2007 (Pub. L. 110-174). Restricted business operations do not include business operations that the person (as that term is defined in Section 2 of the Sudan Accountability and Divestment Act of 2007) conducting the business can demonstrate—

(1) Are conducted under contract directly and exclusively with the regional government of southern Sudan;

(2) Are conducted pursuant to specific authorization from the Office of Foreign Assets Control in the Department of the Treasury, or are expressly exempted under Federal law from the requirement to be conducted under such authorization;

(3) Consist of providing goods or services to marginalized populations of Sudan;

(4) Consist of providing goods or services to an internationally recognized peacekeeping force or humanitarian organization;

(5) Consist of providing goods or services that are used only to promote health or education; or

(6) Have been voluntarily suspended.

(b) C*ertification*. By submission of its offer, the offeror certifies that the offeror does not conduct any restricted business operations in Sudan.

**17. Prohibition on Contracting with Inverted Domestic Corporations (FAR 52.209-2) (May 2011)**

(a) *Definitions*. Inverted domestic corporation and subsidiary have the meaning given in the clause of this contract entitled Prohibition on Contracting with Inverted Domestic Corporations (FAR 52.209-10).

(b) *Relation to Internal Revenue Code*. An inverted domestic corporation as herein defined does not meet the definition of an inverted domestic corporation as defined by the Internal Revenue Code at 26 U.S.C. 7874.

(c) *Representation*. By submission of its offer, the offeror represents that—

(1) It is not an inverted domestic corporation; and

(2) It is not a subsidiary of an inverted domestic corporation.

**18. Representation Relating to Compensation of Former DoD Officials (DFAR 252.203-7005 modified) (Nov 2011)**

(a) Definition. Covered DoD official is defined in the clause at 252.203-7000, Requirements Relating to Compensation of Former DoD Officials.

(b) By submission of this offer, the offeror represents, to the best of its knowledge and belief, that all covered DoD officials employed by or otherwise receiving compensation from the offeror, and who are expected to undertake activities on behalf of the offeror for any resulting contract, are presently in compliance with all post-employment restrictions covered by 18 U.S.C. 207, 41 U.S.C. 2101-2107, and 5 CFR parts 2637 and 2641, including Federal Acquisition Regulation 3.104-2.

(c) The offeror should refer any questions concerning applicability or compliance with post-employment restrictions to the appropriate DoD ethics counselor.

(d) The offeror agrees to notify CH2M HILL of any changes in this certification.

**19. Supply Chain Ethics and Business Conduct**

(a) All CH2M HILL suppliers and subcontractors at any tier who work on CH2M HILL projects are expected to conduct business legally, ethically and in compliance with all expectations set forth in CH2M HILL's "Our Supply Chain Ethics and Business Conduct Principles" and the "Supplement for U. S. Government Work" available at the CH2M HILL website www.ch2m.com/supplier-subcontractor-portal.

(b) By submission of its offer, the offeror agrees to comply with, and require subcontractors at any tier to comply with, the Principles set forth in the documents described in paragraph (a) when doing business with CH2M HILL.

**20. Place of Manufacture (FAR 52.225-18) (Sept 2006)**

(a) *Definitions*. As used in this clause—

" Manufactured end product" means any end product in Federal Supply Classes (FSC) 1000-9999, except—

(1) FSC 5510, Lumber and Related Basic Wood Materials;
(2) Federal Supply Group (FSG) 87, Agricultural Supplies;
(3) FSG 88, Live Animals;
(4) FSG 89, Food and Related Consumables;
(5) FSC 9410, Crude Grades of Plant Materials;
(6) FSC 9430, Miscellaneous Crude Animal Products, Inedible;
(7) FSC 9440, Miscellaneous Crude Agricultural and Forestry Products;
(8) FSC 9610, Ores;
(9) FSC 9620, Minerals, Natural and Synthetic; and
(10) FSC 9630, Additive Metal Materials.

"Place of manufacture" means the place where an end product is assembled out of components, or otherwise made or processed from raw materials into the finished product that is to be provided to the Government. If a product is disassembled and reassembled, the place of reassembly is not the place of manufacture.

(b) For statistical purposes only, the offeror shall indicate whether the place of manufacture of the end products it expects to provide in response to this solicitation is predominantly—

(1) ■ In the United States (Check this box if the total anticipated price of offered end products manufactured in the United States exceeds the total anticipated price of offered end products manufactured outside the United States); or

(2) ☐ Outside the United States.

**21. Certificates Regarding Exemptions From Application of the Service Contract Act.** *(Certification by the offeror as to its compliance with respect to the contract also constitutes its certification as to compliance by its subcontractor if it subcontracts out the exempt services. The Subcontract Administrator is to check a box to indicate if paragraph (1) or (2) applies)*

■ 1. Maintenance, calibration, or repair of certain equipment as described in FAR 22.1003-4(c)(1). The offeror ■ does ☐ does not certify that—

i. The items of equipment to be serviced under this contract are used regularly for other than Governmental purposes and are sold or traded by the offeror in substantial quantities to the general public in the course of normal business operations;

ii. The services will be furnished at prices which are, or are based on, established catalog or market prices (see FAR 22.1003-4(c)(2)(ii)) for the maintenance, calibration, or repair of such equipment; and

iii. The compensation (wage and fringe benefits) plan for all service employees performing work under the contract will be the same as that used for these employees and equivalent employees servicing the same equipment of commercial customers.

■ 2. Certain services as described in FAR 22.1003-4(d)(1). The offeror ■ does ☐ does not certify that—

i. The services under the contract are offered and sold regularly to non-Governmental customers, and are provided by the offeror (or subcontractor in the case of an exempt subcontract) to the general public in substantial quantities in the course of normal business operations;

ii. The contract services will be furnished at prices that are, or are based on, established catalog or market prices (see FAR 22.1003-4(d)(2)(iii));

iii. Each service employee who will perform the services under the contract will spend only a small portion of his or her time (a monthly average of less than 20 percent of the available hours on an annualized basis, or less than 20 percent of available hours during the contract period if the contract period is less than a month) servicing the Government contract; and

iv. The compensation (wage and fringe benefits) plan for all service employees performing work under the contract is the same as that used for these employees and equivalent employees servicing commercial customers.

3. If paragraph (1) or (2) of this clause applies—

i. If the offeror does not certify to the conditions in paragraph (1) or (2) and the Contracting Officer did not attach a Service Contract Act wage determination to the solicitation, the offeror shall notify the Contracting Officer as soon as possible; and

ii. The Contracting Officer may not make an award to the offeror if the offeror fails to execute the certification in paragraph (1) or (2) of this clause or to contact the Contracting Officer as required in paragraph (3)(i) of this clause.

**22. Certification Regarding Knowledge of Child Labor for Listed End Products (FAR 52.222-18) (Feb 2001)**

(a) *Definition*. "Forced or indentured child labor" means all work or service—

(1) Exacted from any person under the age of 18 under the menace of any penalty for its nonperformance and for which the worker does not offer himself voluntarily; or

(2) Performed by any person under the age of 18 pursuant to a contract the enforcement of which can be accomplished by process or penalties.

(b) *Listed end products*. *[The Subcontract Administrator must list in paragraph (b) any end products being acquired under this solicitation that are included in the List of Products Requiring Contractor Certification as to Forced or Indentured Child Labor, unless excluded at FAR 22.1503(b).]* The following end product(s) being acquired under this solicitation is (are) included in the List of Products Requiring Contractor Certification as to Forced or Indentured Child Labor, identified by their country of origin. There is a reasonable basis to believe that listed end products from the listed countries of origin may have been mined, produced, or manufactured by forced or indentured child labor.

| Listed End Product | Listed Countries of Origin |
|---|---|
| | |
| | |
| | |

(c) *Certification*. *[If the Subcontract Administrator has identified end products and countries of origin in paragraph (b) of this provision, then the offeror must certify to either (1) or (2) below by checking the appropriate block.]*

■ (1) The offeror will not supply any end product listed in paragraph (b) of this provision that was mined, produced, or manufactured in a corresponding country as listed for that end product.

☐ (2) The offeror may supply an end product listed in paragraph (b) of this provision that was mined, produced, or manufactured in the corresponding country as listed for that product. The offeror certifies that it has made a good faith effort to determine whether forced or indentured child labor was used to mine, produce, or manufacture such end product. On the basis of those efforts, the offeror certifies that it is not aware of any such use of child labor.

## SECTION II *Complete Sections I and II for offers $25,000 to $99,999*

**23. Certification Regarding Responsibility Matters (FAR 52.209-5) (Apr 2010)**

(a) (1) The offeror certifies, to the best of its knowledge and belief, that:

(i) The offeror and/or any of its Principals:

(A) ☐ Are, ☐ are not, presently debarred, suspended, proposed for debarment, or declared ineligible for the award of contracts by any Federal agency;

(B) ☐ Have, ☐ have not, within a three-year period preceding this offer, been convicted of or had a civil judgment rendered against them for: commission of fraud or a criminal offense in connection with

obtaining, attempting to obtain, or performing a public (Federal, state or local) contract or subcontract; violation of Federal or state antitrust statutes relating to the submission of offers; or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, tax evasion, violating Federal criminal tax laws, or receiving stolen property; and

(C) ☐ Are, ☐ are not, presently indicted for, or otherwise criminally or civilly charged by a governmental entity with, commission of any of the offenses enumerated in subdivision (a)(1)(i)(B) of this provision.

(D) ☐ Have, ☐ have not, within a three-year period preceding this offer, been notified of any delinquent Federal taxes in an amount that exceeds $3,000 for which the liability remains unsatisfied.

(1) Federal taxes are considered delinquent if both of the following criteria apply:

(i) The tax liability is finally determined. The liability is finally determined if it has been assessed. A liability is not finally determined if there is a pending administrative or judicial challenge. In the case of a judicial challenge to the liability, the liability is not finally determined until all judicial appeal rights have been exhausted.

(ii) The taxpayer is delinquent in making payment. A taxpayer is delinquent if the taxpayer has failed to pay the tax liability when full payment was due and required. A taxpayer is not delinquent in cases where enforced collection action is precluded.

(2) Examples.

(i) The taxpayer has received a statutory notice of deficiency, under I.R.C. § 6212, which entitles the taxpayer to seek Tax Court review of a proposed tax deficiency. This is not a delinquent tax because it is not a final tax liability. Should the taxpayer seek Tax Court review, this will not be a final tax liability until the taxpayer has exercised all judicial appeal rights.

(ii) The IRS has filed a notice of Federal tax lien with respect to an assessed tax liability, and the taxpayer has been issued a notice under I.R.C. § 6320 entitling the taxpayer to request a hearing with the IRS Office of Appeals contesting the lien filing, and to further appeal to the Tax Court if the IRS determines to sustain the lien filing. In the course of the hearing, the taxpayer is entitled to contest the underlying tax liability because the taxpayer has had no prior opportunity to contest the liability. This is not a delinquent tax because it is not a final tax liability. Should the taxpayer seek tax court review, this will not be a final tax liability until the taxpayer has exercised all judicial appeal rights.

(iii) The taxpayer has entered into an installment agreement pursuant to I.R.C. § 6159. The taxpayer is making timely payments and is in full compliance with the agreement terms. The taxpayer is not delinquent because the taxpayer is not currently required to make full payment.

(iv) The taxpayer has filed for bankruptcy protection. The taxpayer is not delinquent because enforced collection action is stayed under 11 U.S.C. 362 (the Bankruptcy Code).

(ii) The offeror ☐ has, ☐ has not, within a three-year period preceding this offer, had one or more contracts terminated for default by any Federal agency.

(2) "Principals," for the purposes of this certification, means an officer, director, owner, partner, or a person having primary management or supervisory responsibilities within a business entity (e.g., general manager; plant manager; head of a subsidiary, division, or business segment; and similar positions).

*This Certification Concerns a Matter Within the Jurisdiction of an Agency of the United States and the Making of a False, Fictitious, or Fraudulent Certification May Render the Maker Subject to Prosecution Under Section 1001, Title 18, United States Code.*

(b) The offeror shall provide immediate written notice to the CH2M HILL Subcontract Administrator if, at any time prior to contract award, the offeror learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.

(c) A certification that any of the items in paragraph (a) of this provision exists will not necessarily result in withholding of an award under this solicitation. However, the certification will be considered in connection with a determination of the offeror's responsibility. Failure of the offeror to furnish a certification or provide such additional information as requested by the CH2M HILL Subcontract Administrator may render the offeror nonresponsible.

(d) Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render, in good faith, the certification required by paragraph (a) of this provision. The knowledge and information of an offeror is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

(e) The certification in paragraph (a) of this provision is a material representation of fact upon which reliance was placed when making award. If it is later determined that the offeror knowingly rendered an erroneous certification, in addition to other remedies available to CH2M HILL and the Government, the CH2M HILL Subcontract Administrator may terminate the contract resulting from this solicitation for default.

**24. Federal Funding Accountability and Transparency Act**

## ENCLOSURE 4

Public Law 109-282, Federal Funding Accountability and Transparency Act (FFATA), as amended by Section 6202 of the Government Funding Transparency Act of 2008 (Public Law 110-252), was enacted to reduce wasteful and unnecessary spending by the Federal Government. The objective of FFATA is to empower American tax payers with information that may be used to demand greater fiscal discipline from both Executive and Legislative branches of Government. Pursuant to FFATA, CH2M HILL is required to report certain Federal subcontract awards that are $25,000 or more. The law requires all reported information be made public; therefore, this is to notify prospective offerors that certain CH2M HILL Federal subcontract awards of $25,000 or more may be made public, including subcontract number, award amount and description of subcontract requirements; DUNS number, name, address, and business type of the subcontractor; DUNS number and name of the subcontractor's parent, if applicable; and the principal place of performance of the subcontract.

Pursuant to FFATA, CH2M HILL may be required to report its first tier subcontractors' names and total compensation of each of the five most highly compensated executives (means officers, managing partners, or any other employees in management positions). Total compensation means the cash and noncash dollar value earned by the executive during the preceding fiscal year and includes the following (for more information see 17 CFR 229.402(c)(2)): salary & bonus; awards of stock, stock options & stock appreciation rights; earnings for services under non-equity incentive plans; change in pension value; above market earnings on deferred compensation which is not tax qualified; and other compensation. Reporting of executive compensation is required only if during the preceding fiscal year, the offeror received: (1) 80 percent or more of its annual gross revenues in U.S. federal contracts, subcontracts, loans, grants, subgrants, cooperative agreements; and other forms of Federal financial assistance; AND, (2) $25,000,000 or more in annual gross revenues from U.S. federal contracts, subcontracts, loans, grants, subgrants, cooperative agreements, and other forms of Federal financial assistance; AND, (3) the public does not have access to information about the compensation of the executives in offeror's business through periodic reports filed under section 13(a) or 15(d) of the Securities Exchange Act of 1934 (15 U.S.C. 78m(a), 78o(d)) or section 6104 of the Internal Revenue Code of 1986). (To determine if the public has access to the compensation information, see the U.S. Security and Exchange Commission total compensation filings at http://www.sec.gov/answers/execomp.htm.)

(a) The offeror represents, as part of its offer, that in the previous tax year, its gross income from all sources was $300,000 or more.

- ☐ No, offeror is exempt from FFATA subcontract award reporting requirements and is exempt from responding to questions (b), (c), and (d).
- ☐ Yes, please answer question (b).

(b) In offeror's preceding fiscal year, did offeror's business or organization receive both of the following:

(i) 80 percent or more of its annual gross revenues in U.S. federal contracts, subcontracts, loans, grants, subgrants,cooperative agreements, and other forms of Federal financial assistance; ***and***

(ii) $25,000,000 or more in annual gross revenues from U.S. federal contracts, subcontracts, loans, grants, subgrants, cooperative agreements, and other forms of Federal financial assistance?

- ☐ No, offeror is exempt from FFATA Name and Executive Compensation Reporting and is exempt from responding to question (c). Proceed to question (d).
- ☐ Yes, please answer questions (c) and (d).

(c) Does the public have access to information about the compensation of the executives in offeror's business or organization (the legal entity to which the specific DUNS number provided herein belongs) through periodic reports filed under section 13(a) or 15(d) of the Securities Exchange Act of 1034 (15 U.S.C. 78m(a), 78o(d)) or section 6104 of the Internal Revenue Code of 1986?

- ☐ Yes, offeror is exempt from FFATA Name and Executive Compensation Reporting. Proceed to question (d).
- ☐ No, information for the five most highly compensated executives in offeror's business or organization must be provided below ***AND*** by active registration of the offeror in the System for Award Management (SAM) and posting of the required executive compensation information in SAM at http://www.sam.gov. Proceed to question (d).

***NOTE***: If No is checked above, the offeror certifies that (i) it currently has an active registration in SAM or that it will complete active registration in SAM within two weeks after award of any resulting subcontract, and (ii) it will maintain an active registration status in SAM though the period of performance of any resulting subcontract.

| Executive's Name | Compensation* (USD) |
|---|---|
| 1. | $ |
| 2. | $ |
| 3. | $ |
| 4. | $ |
| 5. | $ |

*Nearest whole dollar up to 12 digits

(d) Offeror must insert the principal place of performance (i.e., the primary site where the subcontract work will be performed)

_____
*Street*

_____
*City* *State* *Zip*+4 (9 digits required)
*Zip +4 as determined at https://tools.usps.com/go/ZipLookupAction!input.action*

_____
*Congressional District as determined at https://www.federalreporting.gov/federalreporting/congressionalDistricts.do*

## SECTION III *Complete Sections I through III for offers $100,000 to $649,999*

**25. Compliance with Veterans' Employment Reporting Requirements (FAR 52.222-38) (Sep 2010)**

By submission of its offer, the offeror represents that, if it is subject to the reporting requirements of 38 U.S.C. 4212(d) (i.e., if it has any contract containing FAR clause 52.222-37, Employment Reports on Veterans), it has submitted the most recent VETS-100A Report required by that clause.

**26. Women-Owned Business (Other than Small Business) (FAR 52.204-5) (May 1999)**

Complete the following Representation only if the offeror is a women-owned business concern and has not represented itself as a small business concern in paragraph (b)(1) of FAR 52.219-1, Small Business Program Representations, of these Representations and Certifications.

The offeror represents that it:

☐ Is a women-owned business concern, or is not ☐ a women-owned business concern.

Definition. "Women-owned business concern," as used in this provision, means a concern which is at least 51 percent owned by one or more women; or in the case of any publicly owned business, at least 51 percent of the stock of which is owned by one or more women; and whose management and daily business operations are controlled by one or more women.

**27. Certification and Disclosure Regarding Payments to Influence Certain Federal Transactions (FAR 52.203-11) (Sep 2007)**

(a) *Definitions*. As used in this provision—"Lobbying contact" has the meaning provided at 2 U.S.C. 1602(8). The terms "agency," "influencing or attempting to influence," "officer or employee of an agency," "person," "reasonable compensation," and "regularly employed" are defined in the FAR clause of this solicitation entitled "Limitation on Payments to Influence Certain Federal Transactions" (52.203-12).

(b) *Prohibition*. The prohibition and exceptions contained in the FAR clause of this solicitation entitled "Limitation on Payments to Influence Certain Federal Transactions" (52.203-12) are hereby incorporated by reference in this provision.

(c) *Certification.* The offeror, by signing its offer, hereby certifies to the best of its knowledge and belief that no Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress on its behalf in connection with the awarding of this contract.

(d) *Disclosure*. If any registrants under the Lobbying Disclosure Act of 1995 have made a lobbying contact on behalf of the offeror with respect to this contract, the offeror shall complete and submit, with its offer, OMB Standard Form LLL, Disclosure of Lobbying Activities, to provide the name of the registrants. The offeror need not report regularly employed officers or employees of the offeror to whom payments of reasonable compensation were made.

(e) *Penalty*. Submission of this certification and disclosure is a prerequisite for making or entering into this contract imposed by 31 U.S.C. 1352. Any person who makes an expenditure prohibited under this provision or who fails to file or amend the disclosure required to be filed or amended by this provision, shall be subject to a civil penalty of not less than $10,000, and not more than $100,000, for each such failure.

**28. Certification of Toxic Chemical Release Reporting (FAR 52.223-13) (Aug 2003)**

(a) Executive Order 13148, of April 21, 2000, Greening the Government through Leadership in Environmental Management, requires submission of this certification as a prerequisite for contract award.

(b) By signing this offer, the offeror certifies that-

1. As the owner or operator of facilities that will be used in the performance of this contract that are subject to the filing and reporting requirements described in section 313 of the Emergency Planning and Community Right-to-Know Act of 1986 (EPCRA) (42 U.S.C. 11023) and section 6607 of the Pollution Prevention Act of 1990 (PPA) (42 U.S.C. 13106), the offeror will file and continue to file for such facilities for the life of the contract the Toxic Chemical Release Inventory Form (Form R) as described in section 313(a) and (g) of EPCRA and section 6607 of PPA; or

2. None of its owned or operated facilities to be used in the performance of this contract is subject to the Form R filing and reporting requirements because each such facility is exempt for at least one of the following reasons: *(Check each block that is applicable.)*

☐ (i) The facility does not manufacture, process or otherwise use any toxic chemicals listed in 40 CFR 372.65;

☐ (ii) The facility does not have 10 or more full-time employees as specified in section 313(b)(1)(A) of EPCRA, 42 U.S.C. 11023(b)(1)(A);

☐ (iii) The facility does not meet the reporting thresholds of toxic chemicals established under section 313(f) of EPCRA, 42 U.S.C. 11023(f) (including alternate thresholds at 40 CFR 372.27, provided an appropriate certification form has been filed with EPA);

☐ (iv) The facility does not fall within the following Standard Industrial Classification (SIC) codes or their corresponding North American Industry Classification System sectors:

A. Major group code 10 (except 1011, 1081, and 1094.

B. Major group code 12 (except 1241).

C. Major group codes 20 through 39.

D. Industry code 4911, 4931, or 4939 (limited to facilities that combust coal and/or oil for the purpose of generating power for distribution in commerce).

E. Industry code 4953 (limited to facilities regulated under the Resource Conservation and Recovery Act, Subtitle C (42 U.S.C. 6921, et seq.), or 5169, or 5171, or 7389 (limited to facilities primarily engaged in solvent recovery services on a contract or fee basis); or

☐ (v) The facility is not located in the United States or its outlying areas.

## SECTION IV *Complete Sections I through IV for offers $650,000 to $999,999*

**29. Cost Accounting Standards Notices and Certification (FAR 52.230-1 modified) (May 2012)**

☐ If this box is checked, the offeror is not required to complete this section.

Note: This notice does not apply to small businesses or foreign governments. This notice is in three parts; identified by Roman numerals I through III. Check here to indicate that the offeror is ☐ a small business or ☐ a foreign government and does not need to complete the following certification.

Offerors shall examine each part and provide the requested information in order to determine Cost Accounting Standards (CAS) requirements applicable to any resultant contract.

If the offeror is an educational institution, Part II does not apply unless the contemplated contract will be subject to full or modified CAS coverage pursuant to 48 CFR 9903.201-2(c)(5) or 9903.201-2(c)(6), respectively.

I. DISCLOSURE STATEMENT --- COST ACCOUNTING PRACTICES AND CERTIFICATION

(a) Any contract in excess of the applicable threshold ($700,000 or $650,000 based on CH2M HILL's prime contract) resulting from this solicitation will be subject to the requirements of the Cost Accounting Standards Board (48 CFR Chapter 99), except for those contracts which are exempt as specified in 48 CFR 9903.201-1.

(b) Any offeror submitting a proposal which, if accepted, will result in a contract subject to the requirements of 48 CFR Chapter 99 must, as a condition of contracting, submit a Disclosure Statement as required by 48 CFR 9903.202. When required, the Disclosure Statement must be submitted as a part of the offeror's proposal under this solicitation unless the offeror has already submitted a Disclosure Statement disclosing the practices used in connection with the pricing of this proposal. If an applicable Disclosure Statement has already been submitted, the offeror may satisfy the requirement for submission by providing the information requested in paragraph (c) of Part I of this provision.

**CAUTION**: In the absence of specific regulations or agreements, a practice disclosed in a Disclosure Statement shall not, by virtue of such disclosure, be deemed to be a proper, approved, or agreed-to practice for pricing proposals or accumulating and report contract performance cost data.

(c) Check the appropriate box below:

☐ (1) *Certificate of Concurrent Submission of Disclosure Statement*.

The offeror hereby certifies that, as a part of the offer, copies of the Disclosure Statement have been submitted as follows: (i) original and one copy to the cognizant Administrative Contracting Officer (ACO) or cognizant Federal agency official authorized to act in that capacity (Federal official), as applicable, and (ii) one copy to the cognizant Federal auditor.

(Disclosure must be on Form No. CASB DS-1 or CASB DS-2, as applicable. Forms may be obtained from the cognizant ACO or Federal official and/or from the loose-leaf version of the Federal Acquisition Regulation.)

Date of Disclosure Statement: _____

Name and Address of Cognizant ACO or Federal Official Where Filed: _____

_____

The offeror further certifies that the practices used in estimating costs in pricing this proposal are consistent with the cost accounting practices disclosed in the Disclosure Statement.

☐ (2) *Certificate of Previously Submitted Disclosure Statement*

The offeror hereby certifies that the required Disclosure Statement was filed as follows:

Date of Disclosure Statement:_____

Name and Address of Cognizant ACO or Federal Official Where Filed: _____

_____

The offeror further certifies that the practices used in estimating costs in pricing this proposal are consistent with the cost accounting practices disclosed in the Disclosure Statement.

☐ (3) *Certificate of Monetary Exemption*

The offeror hereby certifies that the offeror together with all divisions, subsidiaries, and affiliates under common control, did not receive net awards of negotiated prime contracts and subcontracts subject to CAS totaling $50 million or more in the cost accounting period immediately preceding the period in which this proposal was submitted. The offeror further certifies that if such status changes before an award resulting from this proposal, the offeror will advise the CH2M HILL Subcontract Administrator immediately.

☐ (4) *Certification of Interim Exemption*

The offeror hereby certifies that (i) the offeror first exceeded the monetary exemption for disclosure, as defined in (3) of this subsection, in the cost accounting period immediately preceding the period in which this offer was submitted and (ii) in accordance with 48 CFR 9903.202-1, the offeror is not yet required to submit a Disclosure Statement. The offeror further certifies that if an award resulting from this proposal has not been made within 90 days after the end of that period, the offeror will immediately submit a revised certificate to the Subcontract Administrator, in the form specified under subparagraph (c)(1) or (c)(2) of Part I of this provision, as appropriate, to verify submission of a completed Disclosure Statement.

**CAUTION:** Offerors currently required to disclose because they were awarded a CAS-covered prime contract or subcontract of $50 million or more in the current cost account period may not claim this exemption (4). Further, the exemption applies only in connection with proposals submitted before expiration of the 90-day period following the cost accounting period in which the monetary exemption was exceeded.

II. COST ACCOUNTING STANDARDS --- ELIGIBILITY FOR MODIFIED CONTRACT COVERAGE

If the offeror is eligible to use the modified provisions of 48 CFR 9903.201-2(b) and elects to do so, the offeror shall indicate by checking the box below. Checking the box below shall mean that the resultant contract is subject to the Disclosure and Consistency of Cost Accounting Practices clause in lieu of the Cost Accounting Standards clause.

☐ The offeror hereby claims an exemption from the Cost Accounting Standards clause under the provisions of 48 CFR 9903.201-2(b) and certifies that the offeror is eligible for use of the Disclosure and Consistency of Cost Accounting Practices clause because during the cost accounting period immediately preceding the period in which this proposal was submitted, the offeror received less than $50 million in awards of CAS-covered prime contracts and subcontracts. The offeror further certifies that if such status changes before an award resulting from this proposal, the offeror will advise the CH2M HILL Subcontract Administrator immediately.

**CAUTION**: An offeror may not claim the above eligibility for modified contract coverage if this proposal is expect to result in the award of a CAS-covered contract of $50 million or more or if, during its current cost accounting period, the offeror has been awarded a single CAS-covered prime contract or subcontract of $50 million or more.

III. ADDITIONAL COST ACCOUNTING STANDARDS APPLICABLE TO EXISTING CONTRACTS

The offeror shall indicate below whether award of the contemplated contract should, in accordance with subparagraph (a)(3) of the Cost Accounting Standards clause, require a change in established cost accounting practices affecting existing contracts and subcontracts.

☐ Yes ☐ No

Note: If the offeror is an educational institution under the transition provisions of 48 CFR 9903.202-1 (f), contact the CH2M HILL Subcontract Administrator for the appropriate alternate certification.

**30. Proposal Disclosure – Cost Accounting Practice Changes (FAR 52.230-7) (Apr 2005)**

The offeror shall check "yes" below if the contract award will result in a required or unilateral change in cost accounting practice, including unilateral changes to be desirable changes.

☐ Yes ☐ No

If the offeror checked "Yes" above, the offeror shall—

(1) Prepare the price proposal in response to the solicitation using the changed practice for the period of performance for which the practice will be used; and
(2) Submit a description of the changed cost accounting practice to the CH2M HILL Subcontract Administrator and the Cognizant Federal Agency Official as pricing support for the proposal.

**SECTION V** ***Complete Sections I through V for offers $1,000,000 to $4,999,999***

**31. Restrictions on the Use of Mandatory Arbitration Agreements (DFAR 252.222-7006) (Dec 2010)**

(a) The offeror ☐ has, ☐ has not entered into any agreement with any of its employees or independent contractors that requires, as a condition of employment, that the employee or independent contractor agree to resolve through arbitration–

(A) Any claim under title VII of the Civil Rights Act of 1964; or

(B) Any tort related to or arising out of sexual assault or harassment, including assault and battery, intentional infliction of emotional distress, false imprisonment, or negligent hiring, supervision, or retention.

(b) The offeror certifies by signature of any subcontract associated with these representations and certifications, for any lower-tier subcontracts offeror awards after June 17, 2010, that it requires each covered lower-tier subcontractor to agree not to enter into, and not to take any action to enforce, any provision of any agreements, as described herein, with respect to any employee or independent contractor performing work related to such lower-tier subcontract.

## SECTION VI *Complete entire document for offers $5,000,000 and above*

***(Annual Recertification by the Subcontractor of this section will be required as requested by the CH2M HILL Subcontract Administrator)***

**32. Contractor Code of Business Ethics and Conduct (FAR 52.203-13) (Apr 2010)**

(a) Paragraphs (a)(1) through (a)(4) apply to all offerors:

(1) The offeror hereby certifies that it ☐ has ☐ has not established a written code of business ethics and conduct.

(2) If the offeror indicated in (a)(1) that it has not established a written code of business ethics and conduct, the offeror ☐ will ☐ will not have established a written code of business ethics and conduct within 30 days after contract award, unless the CH2M HILL Subcontract Administrator establishes a longer time period.

(3) The offeror hereby certifies that it ☐ has ☐ has not made a copy of its code of business ethics and conduct available to each employee to be engaged in performance of the contract.

(4) If the offeror indicated in (a)(3) that it has not made a copy of the code available to each employee to be engaged in performance of the contract, the offeror by executing any contract resulting from this solicitation agrees to furnish a copy of the code to all such employees within 30 days after contract award, unless the CH2M HILL Subcontract Administrator establishes a longer time period.

(b) Paragraphs (b)(1) and (b)(2) do not apply if the offeror has represented itself as a small business concern pursuant to the award of this contract or if this contract is for the acquisition of a commercial item as defined at FAR 2.101.

(1) The offeror hereby certifies that it ☐ has ☐ has not established an ongoing business ethics awareness and compliance program consistent with the requirements of FAR 52.203-13.

(2) If the offeror indicated in (b)(1) that it has not established an ongoing business ethics awareness and compliance program, the offeror by executing any contract resulting from this solicitation understands that it must establish an ongoing business ethics awareness and compliance program within 90 days after contract award, unless the CH2M HILL Subcontract Administrator establishes a longer time period.

**33. Display of Hotline Poster(s) (FAR 52.203-14 )(Dec 2007)**

By signing below, the offeror certifies that:

(a) This clause applies to all Subcontractors and shall be included in lower tier subcontracts (including this paragraph) that exceed $5,000,000, except when the subcontract-

(1) Is for the acquisition of a commercial item as defined at FAR 2.101; or

(2) Is performed entirely outside the United States.

(b) Definition. “United States,” as used in this clause, means the 50 States, the District of Columbia, and outlying areas.

(c) Display of fraud hotline poster(s). Except as provided above—

(1) During contract performance in the United States, the Subcontractor shall prominently display in common work areas within business segments performing work under this contract and at contract work sites—

(i) Any agency fraud hotline poster or Department of Homeland Security (DHS) fraud hotline poster identified in paragraph (c)(3) of this clause; and

(ii) Any DHS fraud hotline poster subsequently identified by CH2M HILL.

(2) Additionally, if the Subcontractor maintains a company website as a method of providing information to employees, the Subcontractor shall display an electronic version of the poster(s) at the website.

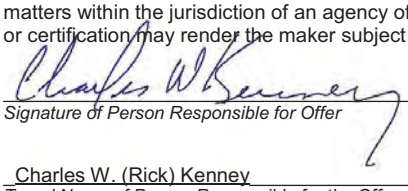
(3) Any required posters may be obtained as follows:

| ***Poster(s)*** | ***Obtain from*** |
|---|---|
| (i)_____ | (ii)_____ |
| _____ | _____ |

(d) If the Subcontractor has implemented a business ethics and conduct awareness program, including a reporting mechanism, such as a hotline poster, then the Subcontractor need not display any agency fraud hotline posters as required in paragraph (b) of this clause, other than any required DHS posters.

**SIGNATURE/CERTIFICATION**

By signing below, the offeror certifies, under penalty of law, that the representations and certifications are accurate, current and complete. The offeror further certifies that it will notify the CH2M HILL Subcontract Administrator of any changes to these representations and certifications. The representations and certifications made by the offeror, as contained herein, concern matters within the jurisdiction of an agency of the United States and the making of a false, fictitious, or fraudulent representation or certification may render the maker subject to prosecution under Title 18, United States Code, Section 1001.



*Signature of Person Responsible for Offer*

June 20, 2013
*Date*

Charles W. (Rick) Kenney
*Typed Name of Person Responsible for the Offer*

Vice President
*Title of Person Responsible for the Offer*

Hazen Research, Inc.
*Legal Business Name of Offeror's Organization (as shown in DUNS record which is accurate and current)*

*Doing Business as Name, if applicable (as shown in DUNS record which is accurate and current)*

4601 Indiana Street
*Street (as shown in DUNS record which is accurate and current)*

| Golden | CO | 80403-1848 |
|---|---|---|
| *City* | *State* | *Zip+4 (9 digits required)* |

*Zip +4 as determined at https://tools.usps.com/go/ZipLookupAction!input.action*
*(as shown as DUNS record which is accurate and current)*

7th Congressional District
*Congressional District as determined at https://www.federalreporting.gov/federalreporting/congressionalDistricts.do*

# PROTOCOLS AND WORK PLAN FOR PROPOSED BENCH-SCALE SOIL WASHING TESTS OF SOILS FROM SANTA SUSANA FIELD LABORATORY IN VENTURA COUNTY, CALIFORNIA

Prepared for

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Solicitation No. CH500SW for Soils Washing Bench Scale Treatability Study
Hazen Proposal 2013-108 (Revision 3) dated June 20, 2013
Hazen Project 11838

Hazen Research, Inc.
4601 Indiana Street
Golden, CO 80403

March 28, 2014

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# HAZEN RESEARCH, INC. STANDARD PROTOCOL FOR RECEIPT OF NON-HAZARDOUS WASTE SAMPLES CONTAINING ORGANIC CONSTITUENTS

## 1.0 SAMPLE RECEIPT, INSPECTION, AND DOCUMENTATION

1.1 Visually inspect the physical condition of the shipping package. Document any damage to the package or any material leakage. Sign the Chain of Custody document showing receipt of the sample if one is provided.

1.2 Determine the gross weight of the sample and record on the Hazen in-house inventory form. Log the sample in to show its receipt and generate a Hazen identification number. Store the package in a refrigerated cooler at 4°C.

1.3 Safely open the packaged soil and observe its physical condition. Document all observations. When finished, store the package in a refrigerated cooler at 4°C.

1.4 Review the summary sheet listing the analytical tests required for soil characterization and obtain the required sample jars for all tests. Calculate required starting mass of sample necessary to provide an adequate amount of final material for analysis. At the completion of the test program, samples will be sent to the selected analytical laboratory.

# HAZEN RESEARCH, INC. STANDARD SAFETY PROTOCOL FOR WASTE SAMPLES CONTAINING ORGANIC CONSTITUENTS

## 1.0 SAFETY

1.1 Standard safety procedures will be followed for all project operations under the guidance of the Hazen Safety Plan, and Chemical Hygiene Plan.

1.2 Project specific safety requirements including level of protection for operating personnel, monitoring of surrounding environment, and any other special requirements will be addressed by the Hazen Safety Officer.

1.3 Hazen clientele or visiting personnel witnessing project operations are required to adhere to both the standard Hazen safety policies and those policies developed for the specific project.

**PROTOCOL FOR INITIAL CHARACTERIZATION OF SOILS FROM SANTA SUSANA FIELD LABORATORY, CALIFORNIA**

The following protocol applies to the initial characterization (screen analysis) of soils.

## 1.0 INITIAL CHARACTERIZATION

From the 5 gallon bucket sample for each depth (2 Soil Samples)

1.1 Figure A1 flowsheet shows the initial sample preparation steps for each soil. The plus 3/8-inch material will be weighed and set aside. The plus 3/8-inch material may be crushed to minus 3/8-inch and sampled for analysis if necessary. Blend the contents of the bucket on a lined pad using shovels by cone and quartering. Depending on the sample moisture content, riffle splitting may be used in place of cone and quartering. Divide the entire sample into 1 kg charges, preferably by riffle splitting.

1.2 Figure A2 flowsheet shows the initial characterization of the minus 3/8-inch material from each sample including both wet and dry screening to obtain fractions for analysis.

1.2.1 The wet screen will be performed at ¼-inch, 9 Tyler mesh, and 200 mesh. The sample will first be wet screened at 200 mesh to remove the fines. The plus 200 mesh will then be screened at the coarser sizes. Analysis of each fraction will determine if Contaminant of Concern (CoC) can be concentrated into a fine fraction by simple wet screening.

1.2.2 The dry screen will be performed at ¼-inch and at 9 Tyler mesh. Screening will be accomplished by placing the sample on top of a ¼-inch and 9 mesh screen stack, and placing the stack on a Ro-tap for about 20 minutes. The analyses of these fraction will determine if an initial screening at a coarser size will reject CoC and perhaps reduce the amount of soil that will be subjected to treatment.

1.2.2 1/4-inch. May be able to reject the plus size. The minus 1/4-inch is suitable for attrition scrubbing and is a good trommel cut.

1.2.3 9-mesh. Possible cut point for trommel scrubbing.

1.2.4 200-mesh. 200-mesh is an appropriate size if screw or rake classification is considered in the future.

1.3 Submit size fractions and water for analysis to CH2M Hill's selected laboratory. Ship in sample bottles and coolers to be provided by the selected laboratory

**PROTOCOL FOR PROCESS TESTING OF SOILS**
**FROM SANTA SUSANA FIELD LABORATORY, CALIFORNIA**

The following protocol applies to the process testing phase of soil washing.

## 1.0 PROCESS TESTING OF EACH SAMPLE

1.1 Figure A3 shows the flowsheet for performing the soil washing operations consisting of simulated trommel scrubbing. Dense media separation (elutriation) and attrition scrubbing is shown in Figure A4.

1.2 Five to ten kg of each soil will be deslimed by wet screening at 200 mesh. The plus 200 mesh material, the decanted minus 200 mesh material, and the screen water will all be weighed for accountability, and submitted for the same suite of analyses to compare with the results of characterization testing.

1.3 Evaluation of simple screening (wet and dry) will have been accomplished during the initial characterization.

1.4 Trommel Scrubbing Tests (total of 4 tests, 2 for each soil, one with and one without amendments)

1.4.1 A split of the wet screened minus 3/8-inch x 200 mesh (10 mm x 75 micron sand/gravel) from Figure A3 will be feed for the trommel scrubbing tests. Anticipate using agitated 3 liter Pyrex beaker with a charge of 1,000 grams of solids and 1,800 grams of water (30-35%) solids which is reasonable for trommel scrubbing. Residence time of 30 minutes.

1.4.2 At the conclusion of the test, the slurry will be wet screened at 200 mesh. All or a representative portion of the minus 200 mesh slurry will be filtered on a Buchner funnel. The size of the funnel will be noted, and the time required for filtration. The plus 200 mesh material, the minus 200 mesh filter cake, and the filtrate will be submitted for the required suite of analyses.

1.5 Dense Media Separation (Elutriation) Testing

1.5.1 Hazen has designed, constructed, and thoroughly tested a Dense Media Separator (DMS - elutriation column). It is a 6-inch diameter by 2 meter high column constructed of clear plastic as shown in Appendix B. A flow diverter at the bottom of the column insures laminar flow through a range of water flow rates. As seen in Figure B1, Several flow meters on the front panel are available for different flow rates. To operate, the column is filled with water to within about 12 inches from the top. The slide gate is then closed, and a slurry of

the feed in introduced to the top of the column. At time zero, the gate is pulled opened and a pre-selected water flow is started simultaneously. The column is allowed to operate until the overflow is clear. The column will be emptied through the bottom to recover coarse solids that can be decanted for recovery. The overflow will be screened at 200 mesh to recover humus.

1.5.2 Feed to the DMS will be a split of the wet screened minus 3/8-inch x 200 mesh (10 mm x 75 micron sand/gravel) from Figure A3. The addition of clean teeter water to the DMS sweeps fine humic material (leaves, twigs, etc.) upward for dewatering on a 200 mesh screen. The dewatered humic fraction and minus 3/8-inch x 200 mesh will be forwarded to the identified third-party analytical lab for CoC analysis.

1.6 Attrition Scrubbing (total of 4 tests, 2 for each soil, one with and one without amendments)

1.6.1 Feed to attrition scrubbing will be a split of the DMS underflow solids from Figure A4. Attrition scrubbing will be performed in a 1 liter square stainless steel cell positioned in a Wemco flotation cell using a standard double-reversed bladed impeller. It is expected that the test will be performed at about 70% solids for 5 to 10 minutes, then diluted to 30-35% solids prior to wet screening at 200 mesh.

1.6.2 Attrition scrubbing tests will be conducted with the following solutions:

1.6.2.1 Water (25°C) with Citrikleen HD (5% solution)

1.6.2.2 Water (25°C) with Biosolve Hydrocarbon Mitigation Agent

1.6.2.3 Water (25°C)

1.6.3 At the conclusion of the test, the slurry will be wet screened at 200 mesh. All or a representative portion of the minus 200 mesh slurry will be filtered on a Buchner funnel. The size of the funnel will be noted, and the time required for filtration. The plus 200 mesh material, the minus 200 mesh filter cake, and the filtrate will be submitted for CoC analysis.

## PROCEDURE FOR SAMPLE HANDLING AND DISPOSITION

The following procedure applies to sample handling and disposition.

### 1.0 SAMPLE HANDLING AND DISPOSITION

1.1 Label all samples and residual test products with time, date, and project number. Store test samples in the refrigerator specified for soils at (4°C) until they are utilized.

1.2 Send the test samples to CH2M Hill selected laboratory for required analyses. Samples must be packaged in a cooler and shipped by overnight delivery.

The following analyses are to be performed.

**Solids**

Bulk density (ASTM D2937)
Moisture Content (ASTM D2216)
Soil pH (EPA 150.1)
TPH (C08 to C30 using Method 8015B)
Silver (Method 6020)
PCBs (Aroclor 1254 using Method 8082)
Total Organic Carbon (TOC)
DIOXTEQM (Dioxin Toxicity Equivalent for Mammals using Method 8290)
Pesticides (Method 8081)

**Water**

Total Dissolved Solids
Total Suspended Solids
pH
TPH (C08 to C30 using Method 8015B)
Silver (Method 6020)
PCBs (Aroclor 1254 using Method 8082)
Total Organic Carbon (TOC)
DIOXTEQM (Dioxin Toxicity Equivalent for Mammals using Method 8290)
Pesticides (Method 8081)

Repeat analyses of the above parameters are required for QA/QC demonstration.

1.3 Record weights of feed used and test products generated on the Hazen in-house inventory form. Demonstrate accountability for all soil received and tested on this form.

1.4 All unused soil, residual test products, cleanout material, and disposable safety equipment will be

stored until the completion of the program report.

1.5 At completion of program report and acceptance by client, ship the products from 1.4 back to the client or dispose of as the client directs.

## PROCEDURE FOR DATA RECORDKEEPING

A dedicated logbook will be maintained for the bench scale testing.

### 1.0 DATA RECORDKEEPING

1.1 The logbook shall have as a minimum the following information:

1.1.1 Organization to whom the book is assigned

1.1.2 Book number

1.1.3 Project name

1.1.4 Start date

1.1.5 End date

1.2 Each page will show the following information:

1.2.1 Names of personnel performing the test

1.2.2 Name of recorder

1.2.3 Date of test

1.2.4 Test information including all observations, notes, calibrations, and sample collection data

1.2.5 Equipment used for testing

1.2.6 Signature and date of person making entries

1.3 The entries into the logbook will be in ink, and corrections are to be single lined out, initialed, and dated.

# QUALITY ASSURANCE PROJECT PLAN

Following are the QA/QC procedures to be used during the bench scale soil washing studies.

## 1.0 SAMPLE RECEIPT

All samples are received in the Hazen Research Shipping/Receiving Department. Upon reception, samples are described and entered in a logbook. Two identification numbers are recorded: a project number referring to Hazen Research's client, and a Hazen number to uniquely identify the samples. A "General Sample Received" form is filled out indicating the project and HRI numbers, and the form is filed for historical record. Samples then are directed to the appropriate Project Manager.

## 2.0 SAMPLE STORAGE

Samples that require cool storage are placed in a refrigerator that maintains a temperature of 4°C.

## 3.0 EQUIPMENT SPECIFICATIONS

3.1 Screen Analyses

3.1.1 All screens are USA Standard Testing Sieves made in accordance with ASTM E-11, Specifications for Wire-Cloth Sieves for Testing Purposes.

3.2 Trommel washing

3.2.1 Tests will be conducted in Pyrex beakers with moderately slow speed overhead agitation. Stainless steel baffles will be placed within the beakers to act as lifters. Agitation speed will be measured.

3.2.2 Water used for testing will be treated tap water supplied to Hazen Research by the North Table Mountain Water and Sanitation District. A typical analysis will be made available upon request.

3.3 Dense Media Separation (Elutriation) Tests

3.3.1 Hazen designed and contractor built DMS. Photos of device are included in Appendix B.

3.3.2 MiniRae 2000 Photo Ionization Detector (PID)

3.4 Attrition Tests

3.4.1 Attrition scrubbing will be conducted in a one-liter Wemco laboratory mill. Tip speed of the attrition mill mechanism operates through a range of about 300 to 2000 ft/min. in a 1:1 tip speed:RPM ratio. RPM is continuously monitored by an analog tachometer attached to the drive mechanism.

3.4.2 Water will be the same as under 3.2.3.

3.5 Measurement of pH

3.5.1 Measurement of pH will be accomplished using a standard laboratory pH meter with a range of 0-14 and an accuracy of 0.1 pH. The procedure for measuring pH will follow Hazen's standard procedure which is in accordance with ASTM Method D-1293, "pH of Water and Waste Water".

3.5.2 The pH electrode will either be an epoxy body, permanent gel-filled combination electrode; or, a conventional silver chloride filled, glass combination electrode. Either electrode will be capable of measuring 0.1 pH units at a temperature range of 0 to 80°C.

3.5.3 Buffer solutions will be capable of providing 0.1 pH accuracy at 25°C, as verified against NBS certified buffers.

3.6 Measurement of Temperature

3.6.1 Temperatures will be measured using thermometers that conform to the test designations specified by the American Society of Testing Materials.

3.7 Glassware

3.7.1 All glassware used during testing (beakers, graduated cylinders, etc) will be either KIMAX or PYREX brand glass designed for general laboratory applications.

3.8 Demineralized Water

3.8.1 Water used for rinsing of pH electrodes, glassware, etc., will be treated by passing tap water

through a mixed anionic/cationic resin bed in a demineralizer provided by Continental Water Systems Corporation.

3.9 Filtration equipment

3.9.1 Standard ceramic Buchner funnels and Pyrex vacuum flasks will be used for the vacuum filtration.

3.9.2 Hazen has a variety of sizes of plate and frame or chamber pressure filters that may be utilized depending on the scale of solids filtration required.

## 4.0 CALIBRATION

4.1 Thermometers

4.1.1 Temperatures will be measured using glass, general purpose, immersion thermometers that conform to the test designations specified by the American Society of Testing Materials.

4.2 Balances

4.2.1 Balances are annually serviced by QA Balance Services, Inc., 7812 S. Newbern Cir., Aurora, Colorado 80016.

# APPENDIX A

Flowsheets for Sample Preparation, Characterization, and Process Testing

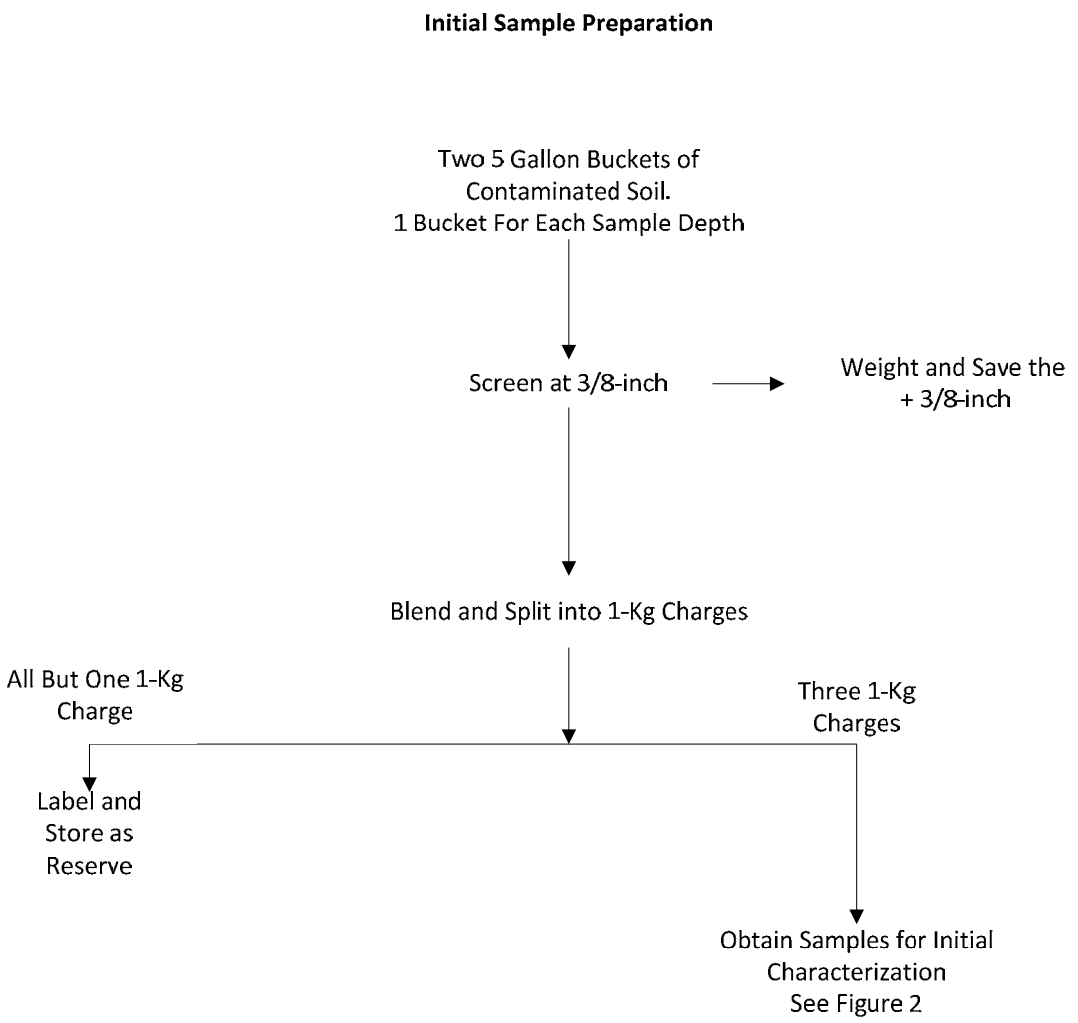



**Figure A1. Initial Sample Preparation Flowsheet**

**Soil Characterization**

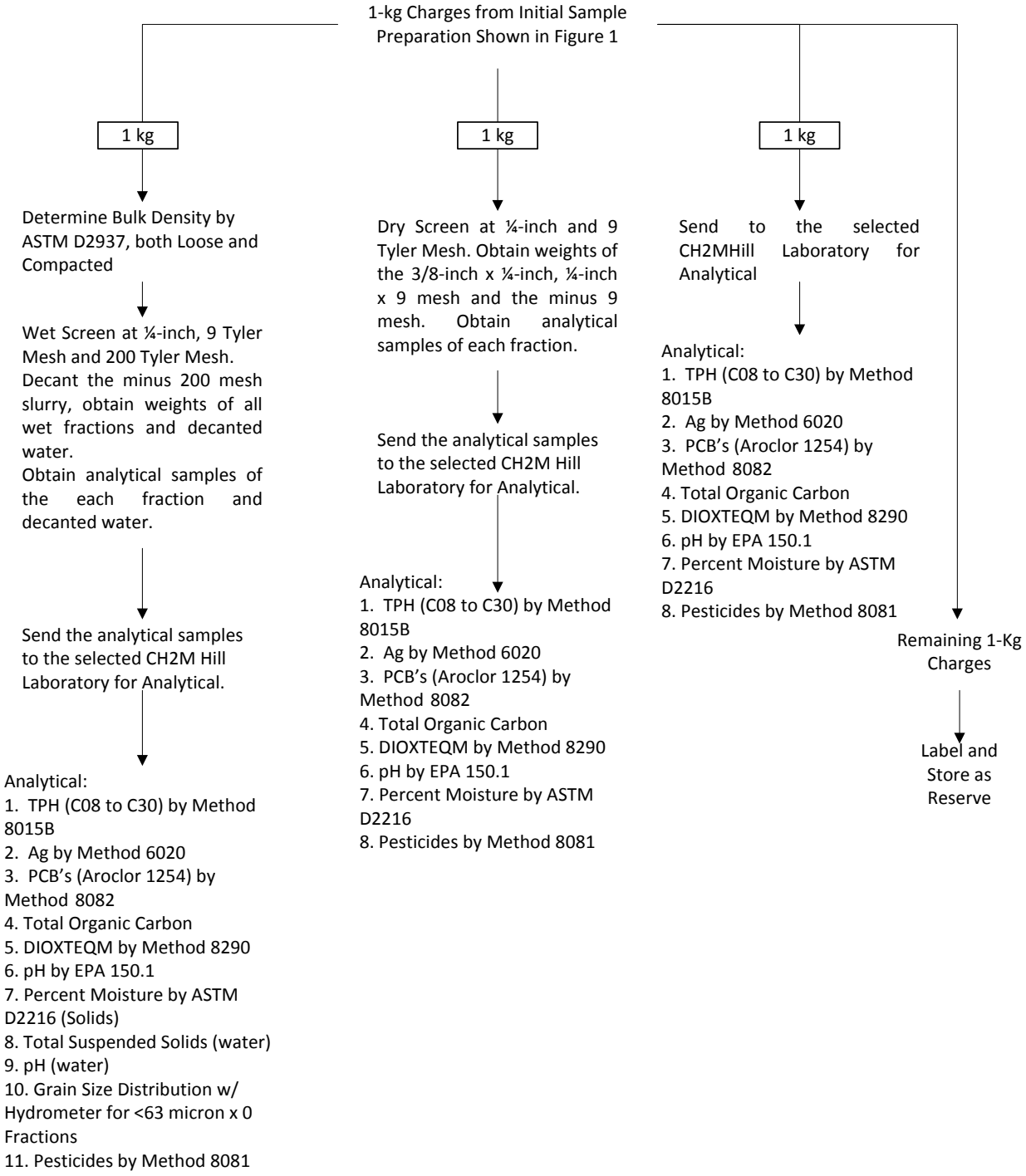
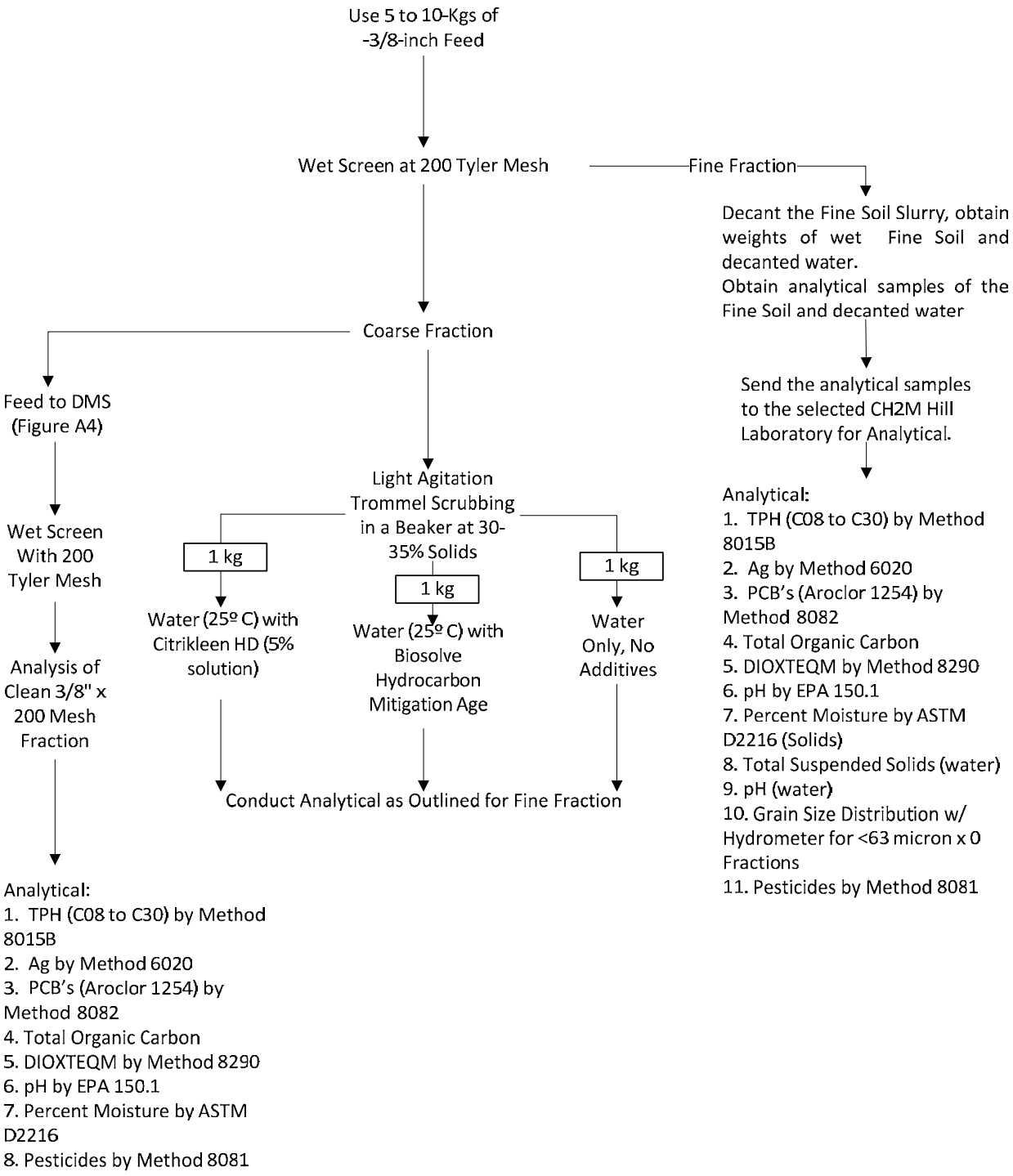

1-kg Charges from Initial Sample Preparation Shown in Figure 1
1 kg
Determine Bulk Density by ASTM D2937, both Loose and Compacted
Wet Screen at ¼-inch, 9 Tyler Mesh and 200 Tyler Mesh. Decant the minus 200 mesh slurry, obtain weights of all wet fractions and decanted water. Obtain analytical samples of the each fraction and decanted water.
Send the analytical samples to the selected CH2M Hill Laboratory for Analytical.
Analytical:
1. TPH (C08 to C30) by Method 8015B
2. Ag by Method 6020
3. PCB's (Aroclor 1254) by Method 8082
4. Total Organic Carbon
5. DIOXTEQM by Method 8290
6. pH by EPA 150.1
7. Percent Moisture by ASTM D2216 (Solids)
8. Total Suspended Solids (water)
9. pH (water)
10. Grain Size Distribution w/ Hydrometer for <63 micron x 0 Fractions
11. Pesticides by Method 8081
1 kg
Dry Screen at ¼-inch and 9 Tyler Mesh. Obtain weights of the 3/8-inch x ¼-inch, ¼-inch x 9 mesh and the minus 9 mesh. Obtain analytical samples of each fraction.
Send the analytical samples to the selected CH2M Hill Laboratory for Analytical.
Analytical:
1. TPH (C08 to C30) by Method 8015B
2. Ag by Method 6020
3. PCB's (Aroclor 1254) by Method 8082
4. Total Organic Carbon
5. DIOXTEQM by Method 8290
6. pH by EPA 150.1
7. Percent Moisture by ASTM D2216
8. Pesticides by Method 8081
1 kg
Send to the selected CH2MHill Laboratory for Analytical
Analytical:
1. TPH (C08 to C30) by Method 8015B
2. Ag by Method 6020
3. PCB's (Aroclor 1254) by Method 8082
4. Total Organic Carbon
5. DIOXTEQM by Method 8290
6. pH by EPA 150.1
7. Percent Moisture by ASTM D2216
8. Pesticides by Method 8081
Remaining 1-Kg Charges
Label and Store as Reserve

**Figure A2. Soil Characterization Flowsheet**

**Lab-scale Soil Washing Treatment**


Use 5 to 10-Kgs of -3/8-inch Feed
Wet Screen at 200 Tyler Mesh
Fine Fraction
Decant the Fine Soil Slurry, obtain weights of wet Fine Soil and decanted water.
Obtain analytical samples of the Fine Soil and decanted water
Send the analytical samples to the selected CH2M Hill Laboratory for Analytical.
Analytical:
1. TPH (C08 to C30) by Method 8015B
2. Ag by Method 6020
3. PCB's (Aroclor 1254) by Method 8082
4. Total Organic Carbon
5. DIOXTEQM by Method 8290
6. pH by EPA 150.1
7. Percent Moisture by ASTM D2216 (Solids)
8. Total Suspended Solids (water)
9. pH (water)
10. Grain Size Distribution w/ Hydrometer for <63 micron x 0 Fractions
11. Pesticides by Method 8081
Coarse Fraction
Feed to DMS (Figure A4)
Wet Screen With 200 Tyler Mesh
Analysis of Clean 3/8" x 200 Mesh Fraction
Analytical:
1. TPH (C08 to C30) by Method 8015B
2. Ag by Method 6020
3. PCB's (Aroclor 1254) by Method 8082
4. Total Organic Carbon
5. DIOXTEQM by Method 8290
6. pH by EPA 150.1
7. Percent Moisture by ASTM D2216
8. Pesticides by Method 8081
Light Agitation Trommel Scrubbing in a Beaker at 30-35% Solids
1 kg
1 kg
1 kg
Water (25º C) with Citrikleen HD (5% solution)
Water (25º C) with Biosolve Hydrocarbon Mitigation Age
Water Only, No Additives
Conduct Analytical as Outlined for Fine Fraction

## Figure A3. Lab-scale Soil Washing Treatment Flowsheet

**Dense Media Separation**

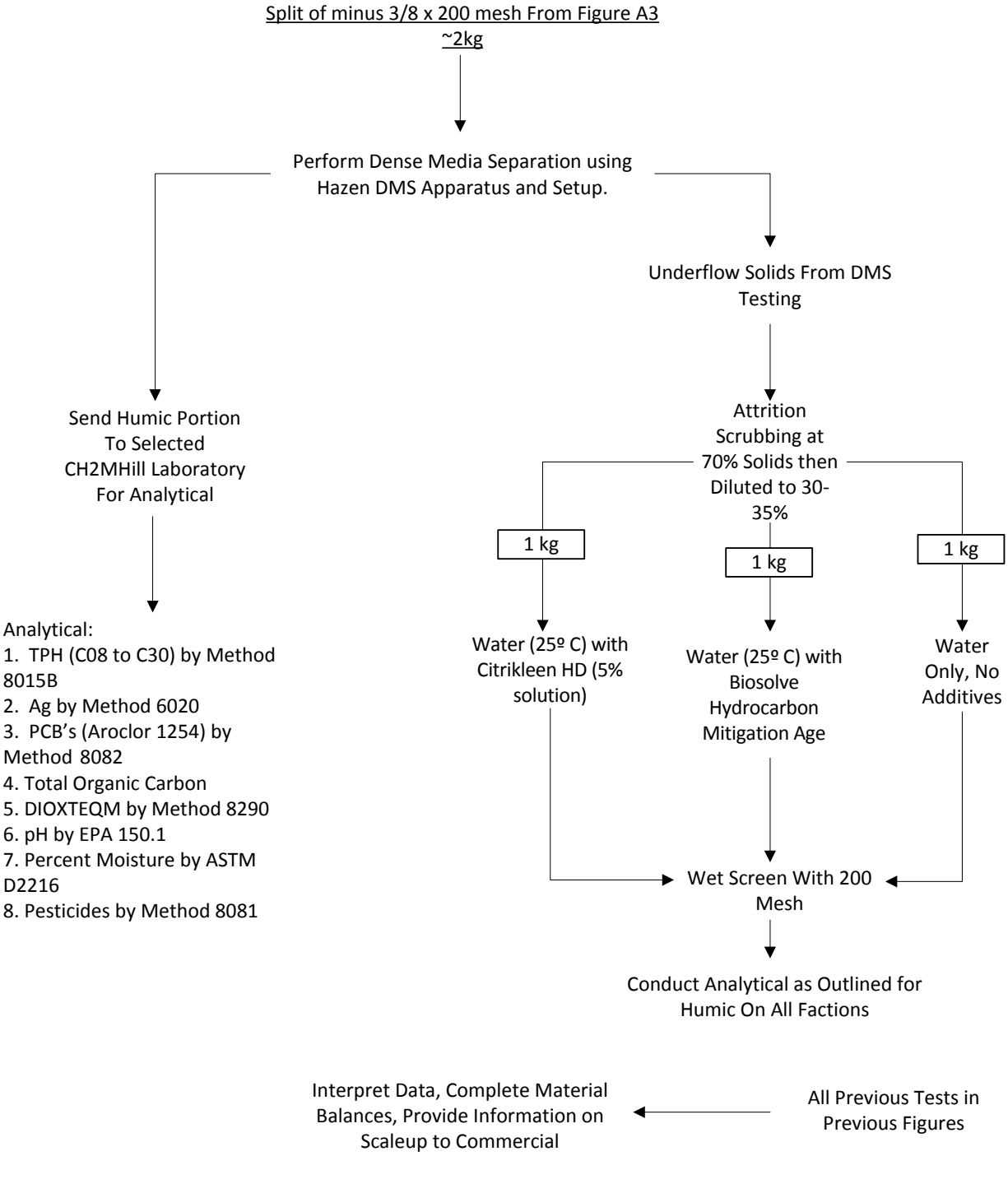

Split of minus 3/8 x 200 mesh From Figure A3
~2kg
Perform Dense Media Separation using Hazen DMS Apparatus and Setup.
Underflow Solids From DMS Testing
Send Humic Portion To Selected CH2MHill Laboratory For Analytical
Analytical:
1. TPH (C08 to C30) by Method 8015B
2. Ag by Method 6020
3. PCB's (Aroclor 1254) by Method 8082
4. Total Organic Carbon
5. DIOXTEQM by Method 8290
6. pH by EPA 150.1
7. Percent Moisture by ASTM D2216
8. Pesticides by Method 8081
Attrition Scrubbing at 70% Solids then Diluted to 30-35%
1 kg
1 kg
1 kg
Water (25º C) with Citrikleen HD (5% solution)
Water (25º C) with Biosolve Hydrocarbon Mitigation Age
Water Only, No Additives
Wet Screen With 200 Mesh
Conduct Analytical as Outlined for Humic On All Factions
Interpret Data, Complete Material Balances, Provide Information on Scaleup to Commercial
All Previous Tests in Previous Figures

**Figure A4. Dense Media Separation Flowsheet**

**APPENDIX B**

Photographs of Dense Media Separator Device

Figure B1. Front View of DMS

Figure B2. Rear View of DMS

# ATTACHMENT A
# Scope of Work
# Soils Washing Bench Scale Treatability Study
# Santa Susana Field Laboratory

## 1.0 Introduction

CH2M HILL is to conduct a soil bench scale treatability study at the Santa Susana Field Laboratory (SSFL) in Ventura County, California utilizing soils washing/volume reduction of contaminated soil. The following presents the scope of work and project schedule for services to be performed by Subcontractor on behalf of CH2M HILL at SSFL. Subcontractor is responsible for providing all services, labor, equipment, and materials to implement the scope of work described below (unless stated otherwise).

## 2.0 Statement of Work

The scope of work consists of the implementation of a bench-scale soils washing treatability study that will include at a minimum an estimate summary two soil samples. The analysis will be performed on soil that is collected by CH2M HILL and delivered to the Subcontractor laboratory. The soil is anticipated to be a moist and loose silty sand with 70% fine sand 30% fines. A boring log for a sample location near where the treatability study soil sample will be collected is included with this attachment. Analytical concentrations of the soil to be tested as part of the treatability study are anticipated to be similar to the concentrations listed below. The objective of the testing is to remove the varied parameters in soil to required cleanup concentrations. Analytical concentrations of the soil to be tested will be similar to the concentrations listed below:

| CDBS1045 | | | | |
|---|---|---|---|---|
| **Sample Depth** | **Parameter Name** | **Concentration** | **Q** | **Unit** |
| 0 - 1 | Aroclor 1254 | 0.018 | = | mg/Kg |
| 0 - 1 | Cadmium | 0.586 | = | mg/Kg |
| 0 - 1 | Diesel Range Organics (C20-C30) | 75 | = | mg/Kg |
| 0 - 1 | DIOXTEQM | 17.3594 | = | pg/g |
| 0 - 1 | Endosulfan Sulfate | 0.0006 | = | mg/Kg |
| 0 - 1 | Silver | 0.477 | = | mg/Kg |
| 10 - 11 | Aroclor 1260 | 0.016 | = | mg/Kg |
| 10 - 11 | Dieldrin | 0.0011 | = | mg/Kg |
| 10 - 11 | Diesel Range Organics (C20-C30) | 88 | = | mg/Kg |
| 5 - 6 | Diesel Range Organics (C20-C30) | 51 | = | mg/Kg |

The final soil clean up levels are still being evaluated, however they should be similar to current values listed in Attachment 1.

## 3.0 Soils Washing Technology Overview

Soil washing technology is generally an aqueous/water based, volume reduction process whereby hazardous contaminants are extracted and concentrated into a small residual portion of the original volume using physical and chemical methods. The process concept involves transfer of the contaminants from the soil or sediment to the wash water and their subsequent removal from the water. Cleaned coarse sand and gravel portions of the treated soil/sediment may be re-deposited on site or otherwise beneficially used as construction fill material onsite. The small volume of contaminated residual concentrate is subsequently treated by other destructive, immobilization, or disposal technologies such as:

- Incineration
- Low temperature thermal desorption
- Chemical extraction
- Dechlorination
- Biodegradation
- Solidification/stabilization
- Vitrification
- Regulated disposal

The physical techniques that are typically employed by any soil/sediment washing technology include crushing/resizing, screening, wet classification, attrition scrubbing, dense media separation, heavy media separation, elutriation, dissolved air flotation, gravity separation and mechanical dewatering. Associated chemical additives include detergents, surfactants, chelating agents, solvents, coagulants, flocculants and pH adjustment.

## 4.0 Soils Washing Treatability Scope Budget

The Subcontractor proposal should provide, at minimum, the following details:

Table 1
Estimate of Charges

| Activity | Cost (dollars) | | | |
|---|---|---|---|---|
| | Labor | Analytical | Other Costs | Totals |
| **Project Management, Schedule, Engineering, and Safety**<br>• Safety, management, and engineering<br>• Schedule and budget controls<br>• Safety meeting and monitoring for systems operation<br>• Submit a work plan to CH2M HILL prior to soil sample collection, summarizing the proposed test method details and laboratory analyses and including a detailed schedule for completion of the scope of work. | | | | |
| **Sample Receipt, Identification, and Analysis**<br>• Receive log, and photograph the test soils samples (2 sample depths total).<br>• *Specify the total volume of soil required to complete the scope of work.* | | | | |

| | | | | | |
|---|---|---|---|---|---|
| | • Obtain representative aliquots for analysis and soil washing testing. *Please specify the proposed method for obtaining the representative aliquots and the quantity of each aliquot (in grams)*.<br>• Measure particle size distribution, pH, bulk density, Total Organic Carbon,<br>• Laboratory analyze each sample for; VOCs using Method 8260B, TPH (C08 to C30) using Method 8015B, antimony and silver using Method 6020, and PCBs (Aroclor 1254 and Aroclor 1260). Laboratory analyses must be able to detect and report concentrations at or below the cleanup concentrations specified in Attachment 1. Laboratory EDD reports will be provided to CH2M HILL for validation. *Please specify the proposed number of samples and associated matrix required for analysis for the duration of the testing.* | | | | |
| | **Soils Washing Bench Scale systems preparation**<br>• A description of the equipment proposed for the treatability study shall be included in the proposal. *Describe the proposed test equipment and any auxiliary equipment.*<br>• At a minimum, the equipment listed below (or its equivalent) should be utilized for the treatability study.<br>o Wet Sieve Screens<br>o Attrition Scrubbing Cell<br>o Dewatering Filter (representative of belt filter or plate & frame dewatering) | | | | |
| | **Conceptual Soils Washing Treatability Evaluation**<br>• Screen out any +3/8 inch material and work only with the -3/8 inch material to accommodate analysis by SW846 methods. Dependent upon the mass of the +3/8 inch fraction, this material may be analyzed after crushing to -3/8 inch nominal size;<br>• Blend and split the -3/8" material into working size samples;<br>• Analyze a head sample for the Contaminants of Concern (CoC), moisture content, bulk density and Total Organic Carbon (TOC);<br>• Perform a dry screen analysis on selected screen sizes and analyze the fractions for the CoC to provide indication if an initial dry screening will concentrate contaminants and perhaps yield a coarse fraction that will not require further processing;<br>• Perform a wet screen analysis on the same screen sizes and analyze the fraction for the CoC for comparison with the dry screen results. Use of either a MultiRAE or Organic Vapor Analyzer (OVA) to monitor potential volatile emissions within screen breaks;<br>• Perform simulated wet trommel scrubbing (light agitation) both with and without a surfactant, screen at one or two sizes and analyze the fractions for CoC. Use of either a MultiRAE or Organic | | | | |

| | | | | | |
|---|---|---|---|---|---|
| | Vapor Analyzer (OVA) to monitor potential volatile emissions within screen breaks;<br><br>• Perform wet attrition scrubbing (heavy agitation) both with and without a surfactant, screen at one or two sizes and analyze the fractions for components of interest. Use of either a MultiRAE or Organic Vapor Analyzer (OVA) to monitor potential volatile emissions within screen breaks;<br><br>• Dewatering of fines fractions (i.e., 63 mm) from wash solution and analyze the solids for moisture content, bulk density, CoC. Measure pressate water for Total Suspended Solids and solubilized CoC.<br><br>• Report results all the above work to with preliminary indication that the application of full-scale soil washing with water & additives may be successful in meeting the current clean-up levels and is cost-effective permitting the clean soil fraction to be returned to the site. Make recommendations for supplemental pilot-scale demonstration, if necessary, based on these results. Provided a ROM budgetary price for potential supplemental pilot-scale operations. Provide a ROM budgetary price for the provision and operation of a full-scale (i.e., >75 tph) soils washing system. | | | | |
| | **Cleanup and Decommissioning**<br><br>• Includes disassembly, cleaning and restoration to pre-project condition<br><br>• Return or approved disposal of project residuals and debris | | | | |
| | **Data Evaluation, Report Preparation, and Closure**<br><br>• Summary report describing the equipment used (including a process flow diagram); methodology; testing parameters; results, including tables and graphics summarizing pre-and post-treatment soil contaminant concentrations; mass balance comparing the initial mass of contaminants in soil with the post-treatment mass of contaminants in residue, and recommendations for the next step, which is anticipated to be pilot testing that is capable of developing the information required for development of a design and cost for full-scale treatment.<br><br>• Contractor is to provide electronic digital photo/video documentation of bench-scale soils washing operations. Electronic files are to be provided on an acceptable external drive mechanism; | | | | |
| | **Total Estimate of Charges** | | | | |

## 5.0 Project Schedule

The delivery of soil samples for the treatability bench scale test is expected to occur in the 3Q 2013. The period of performance is not anticipated to continue past June 1, 2014. This schedule is subject to change.

## 6.0 Pricing Schedules

Table 1 includes the pricing schedule for the components of the treatability bench scale test. We would like to request your rate sheet submitted in a PDF as well as the Word Format (above).

## 7.0 Invoicing

CH2M HILL requests the laboratory invoices to be provided in general accordance with a standardized billing format. Invoices shall be submitted (with all necessary backups) in a timely manner per an agreed-upon monthly deadline. Compliance with the invoicing format and deadlines will facilitate easier tracking, payment from NASA, and subsequent payment to the laboratory.

# APPENDIX B

## Analytical Matrix

Table 3.1-1
**Soil Washing Sampling and Monitoring Plan – CDFF**
*Work Plan/Sampling and Analysis Plan for Bench Scale Soil Treatability Studies: Santa Susana Field Laboratory, Ventura County, California*

| | | pH | % Moisture | Total Organic Carbon | Total Dissolved Solids | Total Suspended Solids | Cationic Exchange Capacity | Bulk Density | Grain Size | Grain Size Distribution (Wet Sieve) | Grain Size Distribution (Hydrometer) | TPH (Method 8015B) | Aroclor 1254 (Method | Silver (Method 6020) | Dioxin (Method 8290) | Pesticides (Method 8081) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **Sample ID** | **Sample #1 collected from 0-5 ft bgs** | | | | | | | | | | | | | | |
| **Untreated Head Sample - (+3/8 in., if applicable)** | **CDBS1045S101** | x | x | x | | | | | | | | x | x | x | x | x |
| **Untreated Head Sample - (-3/8 in.)** | **CDBS1045S102** | x | x | x | | | x | x | x | x | x | x | x | x | x | x |
| **Untreated Head Sample - Wet Sieve (water only)** | | | | | | | | | | | | | | | | |
| 1/4 in. mesh (6.35 mm) | CDBS1045S103 | | | x | | | | | | | | x | x | x | x | x |
| 9 Tyler mesh (2 mm) | CDBS1045S104 | | | x | | | | | | | | x | x | x | x | x |
| 200 mesh (0.074 mm) | CDBS1045S105 (CDBS1045D105) | | | x | | | | | | | | x | x | x | x | x |
| <200 mesh (<0.074 mm) filter cake | CDBS1045S106 | | | x | | | | | | | | x | x | x | x | x |
| **Untreated Head Sample - Dry Sieve** | | | | | | | | | | | | | | | | |
| 1/4 in. mesh (6.35 mm) | CDBS1045S107 | | | x | | | | | | | | x | x | x | x | x |
| 9 Tyler mesh (2 mm) | CDBS1045S108 | | | x | | | | | | | | x | x | x | x | x |
| 200 mesh (0.074 mm) | CDBS1045S109 (CDBS1045S109S) | | | x | | | | | | | | x | x | x | x | x |
| <200 mesh (<0.074 mm) filter cake | CDBS1045S110 | | | x | | | | | | | | x | x | x | x | x |
| **Bulk Screening** | | | | | | | | | | | | | | | | |
| 200 mesh (0.074 mm) | CDBS1045S111 | | | x | | | | | | | | x | x | x | x | x |
| <200 mesh (<0.074 mm) filter cake | CDBS1045S112 | | | x | | | | | | | | x | x | x | x | x |
| **Trommel Scrubbed Sample #1 without amendments** | | | | | | | | | | | | | | | | |
| 200 mesh (0.074 mm) | CDBS1045S113 | | | x | | | | | | | | x | x | x | x | x |
| <200 mesh (<0.074 mm) filter cake | CDBS1045S114 | | | x | | | | | | | | x | x | x | x | x |
| **Trommel Scrubbed Sample #1 with Citrikleen** | | | | | | | | | | | | | | | | |
| 200 mesh (0.074 mm) | CDBS1045S115 | | | x | | | | | | | | x | x | x | x | x |
| <200 mesh (<0.074 mm) filter cake | CDBS1045S116 | | | x | | | | | | | | x | x | x | x | x |
| **Trommel Scrubbed Sample #1 with Biosolve** | | | | | | | | | | | | | | | | |
| 200 mesh (0.074 mm) | CDBS1045S117 (CDBS1045S117MS, CDBS1045S117SD) | | | x | | | | | | | | x | x | x | x | x |
| <200 mesh (<0.074 mm) filter cake | CDBS1045S118 | | | x | | | | | | | | x | x | x | x | x |
| **Elutriation Sample #1** | | | | | | | | | | | | | | | | |
| -3/8 in. x 200 mesh humic material | CDBS1045S119 | | | x | | | | | | | | x | x | x | x | x |
| **Attrition Scrubbed Sample #1 without amendments** | | | | | | | | | | | | | | | | |
| 200 mesh (0.074 mm) | CDBS1045S120 | | | x | | | | | | | | x | x | x | x | x |
| <200 mesh (<0.074 mm) filter cake | CDBS1045S121 | | | x | | | | | | | | x | x | x | x | x |
| **Attrition Scrubbed Sample #1 with Citrikleen** | | | | | | | | | | | | | | | | |
| 200 mesh (0.074 mm) | CDBS1045S122 (CDBS1045D122) | | | x | | | | | | | | x | x | x | x | x |
| <200 mesh (<0.074 mm) filter cake | CDBS1045S123 | | | x | | | | | | | | x | x | x | x | x |
| **Attrition Scrubbed Sample #1 with Biosolve** | | | | | | | | | | | | | | | | |
| 200 mesh (0.074 mm) | CDBS1045S124 (CDBS1045S124S) | | | x | | | | | | | | x | x | x | x | x |
| <200 mesh (<0.074 mm) filter cake | CDBS1045S125 | | | x | | | | | | | | x | x | x | x | x |
| | | **Sample #2 collected from 5-11 ft bgs** | | | | | | | | | | | | | | |
| **Untreated Head Sample - (+3/8 in., if applicable)** | **CDBS1045S201** | x | x | x | | | | | | | | x | | | | x |
| **Untreated Head Sample - (-3/8 in.)** | **CDBS1045S202** | x | x | x | | | x | x | x | x | x | x | | | | x |
| **Untreated Head Sample - Wet Sieve (water only)** | | | | | | | | | | | | | | | | |
| 1/4 in. mesh (6.35 mm) | CDBS1045S203 | | | x | | | | | | | | x | | | | x |
| 9 Tyler mesh (2 mm) | CDBS1045S204 | | | x | | | | | | | | x | | | | x |
| 200 mesh (0.074 mm) | CDBS1045S205 | | | x | | | | | | | | x | | | | x |
| <200 mesh (<0.074 mm) filter cake | CDBS1045S206 | | | x | | | | | | | | x | | | | x |
| **Untreated Head Sample - Dry Sieve** | | | | | | | | | | | | | | | | |
| 1/4 in. mesh (6.35 mm) | CDBS1045S207 | | | x | | | | | | | | x | | | | x |
| 9 Tyler mesh (2 mm) | CDBS1045S208 | | | x | | | | | | | | x | | | | x |
| 200 mesh (0.074 mm) | CDBS1045S209 (CDBS1045D209) | | | x | | | | | | | | x | | | | x |
| <200 mesh (<0.074 mm) filter cake | CDBS1045S210 | | | x | | | | | | | | x | | | | x |
| **Bulk Screening** | | | | | | | | | | | | | | | | |
| 200 mesh (0.074 mm) | CDBS1045S211 | | | x | | | | | | | | x | | | | x |
| <200 mesh (<0.074 mm) filter cake | CDBS1045S212 | | | x | | | | | | | | x | | | | x |
| **Trommel Scrubbed Sample #2 without amendments** | | | | | | | | | | | | | | | | |
| 200 mesh (0.074 mm) | CDBS1045S213 (CDBS1045S213MS, CDBS1045S213SD) | | | x | | | | | | | | x | | | | x |
| <200 mesh (<0.074 mm) filter cake | CDBS1045S214 | | | x | | | | | | | | x | | | | x |
| **Trommel Scrubbed Sample #2 with Citrikleen** | | | | | | | | | | | | | | | | |
| 200 mesh (0.074 mm) | CDBS1045S215 | | | x | | | | | | | | x | | | | x |
| <200 mesh (<0.074 mm) filter cake | CDBS1045S216 | | | x | | | | | | | | x | | | | x |
| **Trommel Scrubbed Sample #2 with Biosolve** | | | | | | | | | | | | | | | | |
| 200 mesh (0.074 mm) | CDBS1045S217 | | | x | | | | | | | | x | | | | x |
| <200 mesh (<0.074 mm) filter cake | CDBS1045S218 | | | x | | | | | | | | x | | | | x |
| **Elutriation Sample #2** | | | | | | | | | | | | | | | | |
| -3/8 in. x 200 mesh humic material | CDBS1045S219 | | | x | | | | | | | | x | | | | x |
| **Attrition Scrubbed Sample #2 without amendments** | | | | | | | | | | | | | | | | |
| 200 mesh (0.074 mm) | CDBS1045S220 | | | x | | | | | | | | x | | | | x |
| <200 mesh (<0.074 mm) filter cake | CDBS1045S221 | | | x | | | | | | | | x | | | | x |
| **Attrition Scrubbed Sample #2 with Citrikleen** | | | | | | | | | | | | | | | | |
| 200 mesh (0.074 mm) | CDBS1045S222 (CDBS1045S222MS, CDBS1045S222SD) | | | x | | | | | | | | x | | | | x |
| <200 mesh (<0.074 mm) filter cake | CDBS1045S223 | | | x | | | | | | | | x | | | | x |
| **Attrition Scrubbed Sample #2 with Biosolve** | | | | | | | | | | | | | | | | |
| 200 mesh (0.074 mm) | CDBS1045S224 (CDBS1045S224S) | | | x | | | | | | | | x | | | | x |
| <200 mesh (<0.074 mm) filter cake | CDBS1045S225 | | | x | | | | | | | | x | | | | x |
| **Composited Washwater Supernatent** | **CDLS1045S201** | x | | x | x | x | | | | | | x | x | x | x | x |

Notes:
TPH = total petroleum hydrocarbons
ft bgs = feet below ground surface
mm = millimeter

# APPENDIX C

## Samples Received

# Sample Received

HRI Number: 53934
Project Number: 11838
Proposal Number:
Project Manager: Johnson, Dennis
Client: CH2M Hill
Client Rep: Sarah Vaughn
Rep Contact Info Via:
HRI Comments:

Description: Contaminated Soil
Entered by Employee: Feis, Justin
Date Received: 5/12/2014
Sample Physical State: Solid
Sample Container Type: Cooler
Total No of Samples: 6
Approx Wt. of Sample: 20-100 lb
Treatability Study (Yes/No): No

## Hazards:

Dust (Yes/No): No
Radioactive (Yes/No): No
Toxic (Yes/No): Yes
Unknown (Yes/No): No
Flammable (Yes/No): No
Corrosive (Yes/No): No
Other Hazard (Yes/No): No
Non-Hazardous (Yes/No): No

| UniqueID | HRI Number | SampleID or Description | Container Type | Physical State | Sample Net Wt. | Net Wt. Units |
|---|---|---|---|---|---|---|
| 2014I-001096 | 53934-0001 | Contaminated Soil | Cooler | Solid | | |
| 2014I-001097 | 53934-0002 | Contaminated Soil | Cooler | Solid | | |
| 2014I-001098 | 53934-0003 | Contaminated Soil | Cooler | Solid | | |
| 2014I-001099 | 53934-0004 | Contaminated Soil | Cooler | Solid | | |
| 2014I-001100 | 53934-0005 | Contaminated Soil | Cooler | Solid | | |
| 2014I-001101 | 53934-0006 | Contaminated Soil | Cooler | Solid | | |

# APPENDIX D

## Experimental Flowsheets

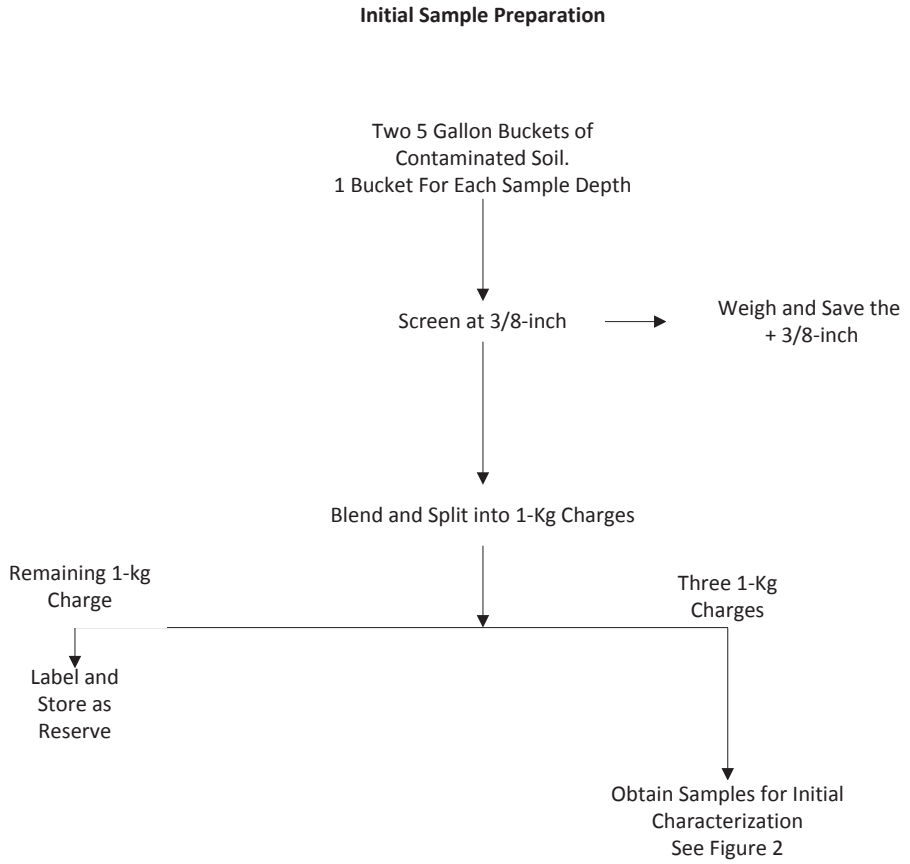



Figure 1

Gross Sample Preparation Flowsheet

**Soil Characterization**

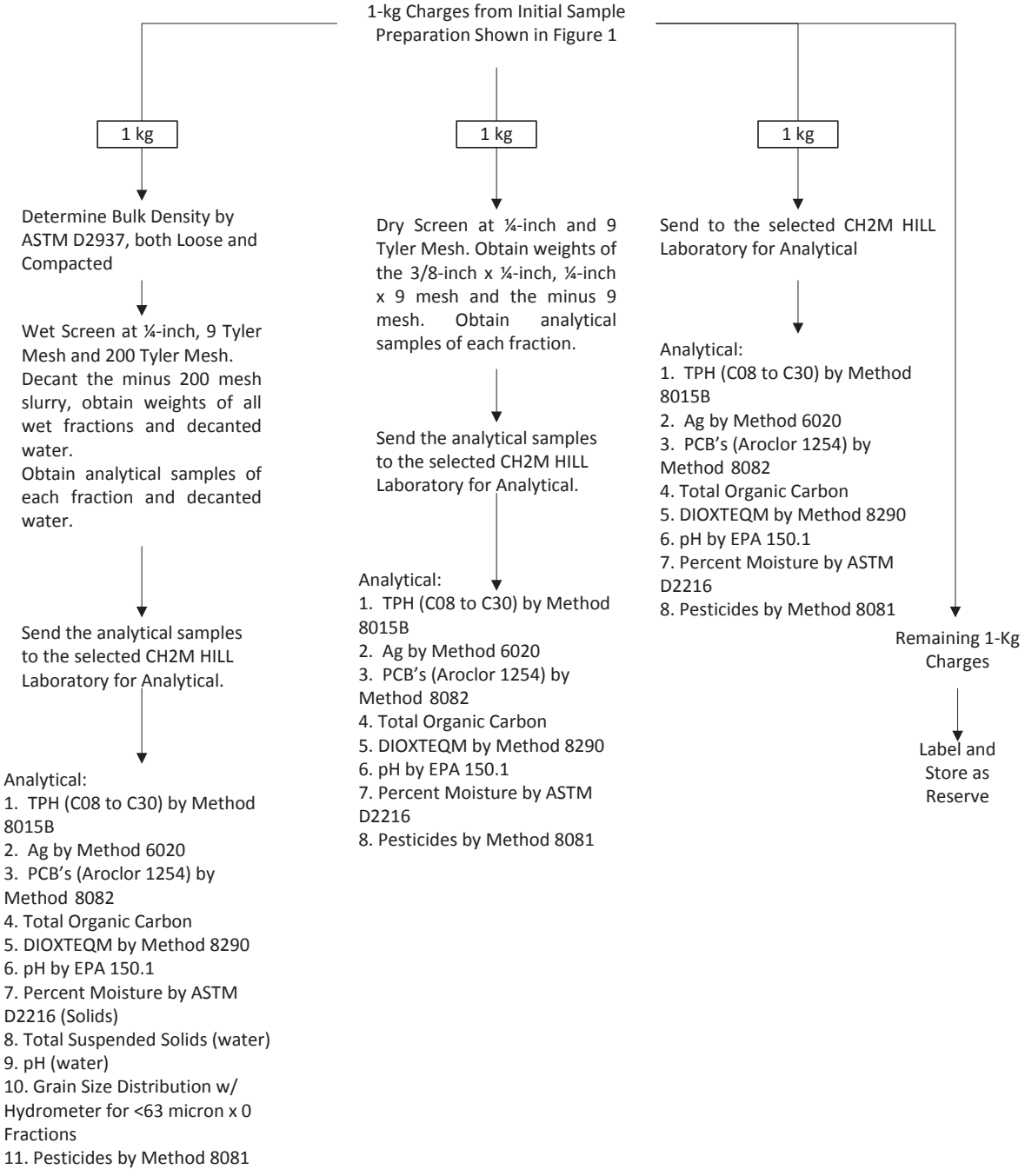

1-kg Charges from Initial Sample Preparation Shown in Figure 1
1 kg
Determine Bulk Density by ASTM D2937, both Loose and Compacted
Wet Screen at ¼-inch, 9 Tyler Mesh and 200 Tyler Mesh. Decant the minus 200 mesh slurry, obtain weights of all wet fractions and decanted water. Obtain analytical samples of each fraction and decanted water.
Send the analytical samples to the selected CH2M HILL Laboratory for Analytical.
Analytical:
1. TPH (C08 to C30) by Method 8015B
2. Ag by Method 6020
3. PCB's (Aroclor 1254) by Method 8082
4. Total Organic Carbon
5. DIOXTEQM by Method 8290
6. pH by EPA 150.1
7. Percent Moisture by ASTM D2216 (Solids)
8. Total Suspended Solids (water)
9. pH (water)
10. Grain Size Distribution w/ Hydrometer for <63 micron x 0 Fractions
11. Pesticides by Method 8081
1 kg
Dry Screen at ¼-inch and 9 Tyler Mesh. Obtain weights of the 3/8-inch x ¼-inch, ¼-inch x 9 mesh and the minus 9 mesh. Obtain analytical samples of each fraction.
Send the analytical samples to the selected CH2M HILL Laboratory for Analytical.
Analytical:
1. TPH (C08 to C30) by Method 8015B
2. Ag by Method 6020
3. PCB's (Aroclor 1254) by Method 8082
4. Total Organic Carbon
5. DIOXTEQM by Method 8290
6. pH by EPA 150.1
7. Percent Moisture by ASTM D2216
8. Pesticides by Method 8081
1 kg
Send to the selected CH2M HILL Laboratory for Analytical
Analytical:
1. TPH (C08 to C30) by Method 8015B
2. Ag by Method 6020
3. PCB's (Aroclor 1254) by Method 8082
4. Total Organic Carbon
5. DIOXTEQM by Method 8290
6. pH by EPA 150.1
7. Percent Moisture by ASTM D2216
8. Pesticides by Method 8081
Remaining 1-Kg Charges
Label and Store as Reserve

Figure 2

Initial Sample Characterization Flowsheet

**Lab-scale Soil Washing Treatment**

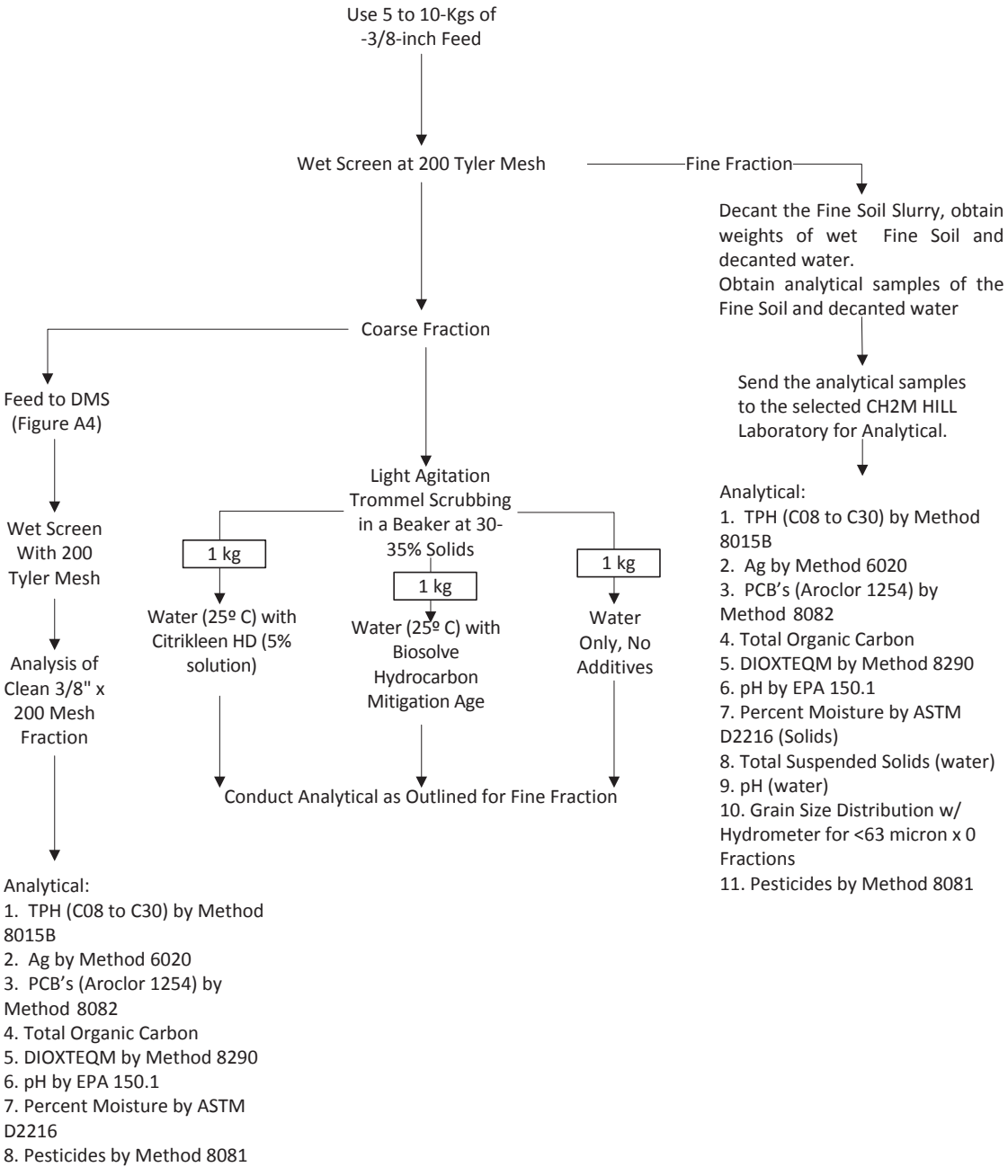

Use 5 to 10-Kgs of -3/8-inch Feed
Wet Screen at 200 Tyler Mesh
Fine Fraction
Decant the Fine Soil Slurry, obtain weights of wet Fine Soil and decanted water.
Obtain analytical samples of the Fine Soil and decanted water
Send the analytical samples to the selected CH2M HILL Laboratory for Analytical.
Analytical:
1. TPH (C08 to C30) by Method 8015B
2. Ag by Method 6020
3. PCB's (Aroclor 1254) by Method 8082
4. Total Organic Carbon
5. DIOXTEQM by Method 8290
6. pH by EPA 150.1
7. Percent Moisture by ASTM D2216 (Solids)
8. Total Suspended Solids (water)
9. pH (water)
10. Grain Size Distribution w/ Hydrometer for <63 micron x 0 Fractions
11. Pesticides by Method 8081
Coarse Fraction
Feed to DMS (Figure A4)
Wet Screen With 200 Tyler Mesh
Analysis of Clean 3/8" x 200 Mesh Fraction
Analytical:
1. TPH (C08 to C30) by Method 8015B
2. Ag by Method 6020
3. PCB's (Aroclor 1254) by Method 8082
4. Total Organic Carbon
5. DIOXTEQM by Method 8290
6. pH by EPA 150.1
7. Percent Moisture by ASTM D2216
8. Pesticides by Method 8081
Light Agitation Trommel Scrubbing in a Beaker at 30-35% Solids
1 kg
Water (25º C) with Citrikleen HD (5% solution)
1 kg
Water (25º C) with Biosolve Hydrocarbon Mitigation Age
1 kg
Water Only, No Additives
Conduct Analytical as Outlined for Fine Fraction

Figure 3

Laboratory-scale Soil Washing Flowsheet

**Dense Media Separation**

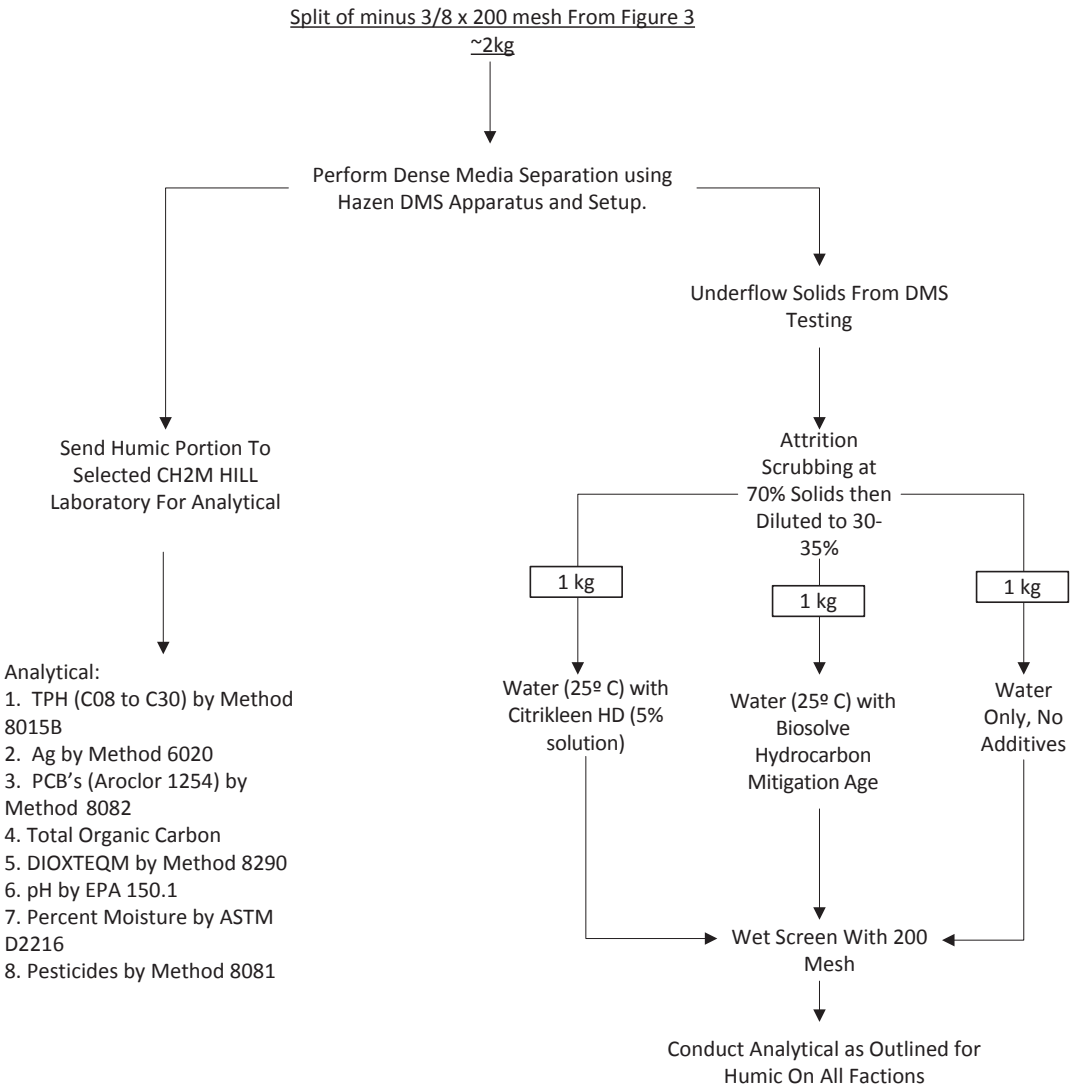

Split of minus 3/8 x 200 mesh From Figure 3
~2kg
Perform Dense Media Separation using Hazen DMS Apparatus and Setup.
Send Humic Portion To Selected CH2M HILL Laboratory For Analytical
Analytical:
1. TPH (C08 to C30) by Method 8015B
2. Ag by Method 6020
3. PCB's (Aroclor 1254) by Method 8082
4. Total Organic Carbon
5. DIOXTEQM by Method 8290
6. pH by EPA 150.1
7. Percent Moisture by ASTM D2216
8. Pesticides by Method 8081
Underflow Solids From DMS Testing
Attrition Scrubbing at 70% Solids then Diluted to 30-35%
1 kg
1 kg
1 kg
Water (25º C) with Citrikleen HD (5% solution)
Water (25º C) with Biosolve Hydrocarbon Mitigation Age
Water Only, No Additives
Wet Screen With 200 Mesh
Conduct Analytical as Outlined for Humic On All Factions

Figure 4

Laboratory-scale DMS Test Flowsheet

# APPENDIX E

## Dry and Wet Screening

**Hazen Research**
**Project 11838**
**Initial Screening Data**

| HRI | Cooler | Weight, kg | Depth, ft | Client ID | +3/8 in., g | +3/8 in., % |
|---|---|---|---|---|---|---|
| 53934-0001 | 1 | 24.15 | 0-5 | CDBS1045 | 471 | 1.95 |
| 53934-0003 | 3 | 23.20 | 5-10.9 | CDBS1045 | 9.80 | 0.04 |
| 53934-0004 | 4 | 23.60 | 0-5 | CDBS1045 | 919 | 3.89 |
| 53934-0005 | 5 | 21.80 | 5-10.9 | CDBS1045 | X | <1.00 |

X denotes+3/8 in. material from cooler 5 consisted of 3, roughly 0.5 in. rocks that were combined with the +3/8 in. material from Cooler 4

**Dry Screening**

| Sample | Depth, ft | Initial Wt | Weights, g | | | Fraction, % | | |
|---|---|---|---|---|---|---|---|---|
| | | | +1/4 in. | 1/4 in. x 9 Mesh | -9 Mesh | +1/4 in. | 1/4 in. x 9 Mesh | -9 Mesh |
| 3573-52-0 | 0-5 | 989 | 9.16 | 72.7 | 901 | 0.93 | 7.40 | 91.7 |
| 3573-53-0 | 5-10.9 | 988 | 0.00 | 14.2 | 971 | 0.00 | 1.44 | 98.6 |

**Wet Screening**

| Sample | Depth, ft | Wet Weights, g | | | | | Moisture, % | | | | | Dry Weight, g | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Feed | +1/4 in. | 1/4 in. x 9 Mesh | 9 x 200 Mesh | -200 Mesh | Feed | +1/4 in. | 1/4 in. x 9 Mesh | 9 x 200 Mesh | -200 Mesh | Feed | +1/4 in. | 1/4 in. x 9 Mesh | 9 x 200 Mesh | -200 Mesh |
| 3573-52-0 | 0-5 | 995 | 4.20 | 61.3 | 679 | 429 | 6.06 | 2.78 | 5.70 | 19.0 | 33.9 | 935 | 4.1 | 57.8 | 550 | 284 |
| 3573-53-0 | 5-10.9 | 1,003 | 0.00 | 11.2 | 750 | 451 | 6.94 | 0.00 | 16.6 | 21.4 | 38.1 | 933 | 0.00 | 9.34 | 589 | 279 |

| Sample | Depth, ft | Initial Wt | Fraction, % | | | |
|---|---|---|---|---|---|---|
| | | | +1/4 in. | 1/4 in. x 9 Mesh | 9 x 200 Mesh | -200 Mesh |
| 3573-52-0 | 0-5 | 995 | 0.46 | 6.46 | 61.4 | 31.7 |
| 3573-53-0 | 5-10.9 | 1,003 | 0.00 | 1.06 | 67.1 | 31.8 |

# APPENDIX F

## Bulk Density

**Hazen Research**

**Project 11838**

**Bulk Density Data**

| Sample Depth, ft | Weight, g | | | Sample Weight, g | | Sample Weight, lb | | Bulk Density, lb/ft$^3$ | |
|---|---|---|---|---|---|---|---|---|---|
| | Vessel Tare | Loose | Compacted | Loose | Compacted | Loose | Compacted | Loose | Compacted |
| 0-5 | 252 | 382 | 410 | 130 | 158 | 0.287 | 0.348 | 62.0 | 75.2 |
| 5-10.9 | 252 | 381 | 421 | 129 | 170 | 0.284 | 0.374 | 61.3 | 80.7 |

Note: Box size was 1/216 (0.00463) ft$^3$.

HAZEN

# Bulk Density

By: GARY BENTON Project No.: 11838

Date: 07.17.2014 HRI No.: 53934

Weight units are: (g) kg lb other_____

Bulk Density units are: g/cc kg/m³ (lb/ft³) other_____

| Sample ID | Sample Description | Box Size (ft³) | Tare Wt. | Loose Wt. | Packed Wt. | Loose BD | Packed BD |
|---|---|---|---|---|---|---|---|
| 53934 | COOLER 1+4 | 1/216 | 251.8 | 380.5 | 421.3 | | |
| 53934 | COOLER 3+5 | 1/216 | 251.8 | 382.0 | 409.8 | | |

HAZEN RESEARCH, INC.

# APPENDIX G

## Trommel Scrubbing

**Hazen Research**
**Project 11838**
**Simulated Trommel Scrubbing Data**

| Sample | Depth, ft | Moisture, % | Target Dry Solids, g | Target Wet Solids, g | Solution in Solids, g | Target Solids, % | Solution Type | Target Soln to Add, g | Solid Wt, g | Solution Wt, g | Actual Solids |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 3573-52-8 | 0-5 | 16.0 | 1000 | 1160 | 160 | 40 | Water | 1340 | 1160 | 1340 | 39% |
| 3573-53-8 | 5-11 | 20.3 | 1000 | 1203 | 203 | 40 | Water | 1297 | 1203 | 1297 | 38% |
| 3573-52-8 | 0-5 | 16.0 | 1000 | 1160 | 160 | 40 | Citrikleen | 1340 | 1160 | 1340 | 39% |
| 3573-53-8 | 5-11 | 20.3 | 1000 | 1203 | 203 | 40 | Citrikleen | 1297 | 1203 | 1297 | 38% |
| 3573-52-8 | 0-5 | 16.0 | 1000 | 1160 | 160 | 40 | Biosolve | 1340 | 1160 | 1340 | 39% |
| 3573-53-8 | 5-11 | 20.3 | 1000 | 1203 | 203 | 40 | Biosolve | 1297 | 1203 | 1299 | 38% |
| 3573-55-9a | 0-5 | 15.1 | 1000 | 1151 | 151 | 40 | Water | 1349 | 1151 | 1349 | 39% |
| 3573-55-9b | 0-5 | 15.1 | 1000 | 1151 | 151 | 40 | Citrikleen | 1349 | 1151 | 1349 | 39% |

# APPENDIX H

## Elutriation

**Summary of Elutriation**

| Test | Date | Feed Sample | | Operators | Objective | Feed | | | Stage | Rate, gpm | Time, min | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Sample ID | Sample Type | | | Weight, kg | | Moisture Content, % Moisture | | | | |
| | | | | | | Dry | Wet | | | | | |
| 3778-108 | 6/5/2014 | 3573-52-8 | plus 75 µm | D. Anger, M. Esquibel, E. Simpson, | Test flow rate to make visible separation of organics and soil | 0.25 | 0.30 | 16 | Rougher | 5–8 | na | Started at 5 gpm, clear separation at 8 gpm |
| 3778-109 | 6/5/2014 | 3573-52-8 | plus 75 µm | D. Anger, M. Esquibel, E. Simpson, | Make separation between organics and soil | 0.50 | 0.60 | 16 | Rougher | 8 | na | |
| 3778-115 | 6/10/2014 | 3573-52-8 | plus 75 µm | M. Angelino, D. Anger | Separate organics and soil at 2 size fractions | 2.35 | 2.80 | 16 | 850 × 300 µm<br>Minus 300 µm | 8<br>2.5 | 9<br>15 | Organics in underflow<br>Very little organics in underflow |
| 3778-116 | 6/11/2014 | 3573-53-8 | plus 75 µm | M. Angelino, D. Anger | Repeat test 3778-115 on sample 3573-53-8 | 2.19 | 2.75 | 20 | 850 × 300 µm<br>Minus 300 µm | 10<br>3.5 | 5<br>25 | <br>Very little organics left in underflow |
| 3778-122 | 6/11/2014 | 3573-55-1 | plus 75 µm | M. Angelino, D. Anger | Separate organics and soil at 850 × 300 µm | 3.03 | 3.67 | 18 | 850 × 300 µm | 8 | 10 | Most organics in overflow |
| 3778-123 | 6/11/2014 | 3573-55-3 | plus 75 µm | M. Angelino, D. Anger | Repeat test 3778-122 on sample 3573-55-3 | 3.16 | 3.92 | 19 | 850 × 300 µm | 8 | 10 | Most organics in overflow |

na = not applicable

# APPENDIX I

## Attrition Scrubbing

**Summary of Attrition**

| Test | Feed Sample | | Operators | Objective | Conditions | | Weight, g | | | | | Pulp Density, % Solids | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Sample ID | Sample Type | | | Time, min | Reagent | Dry Sample | Initial Water | Reagent | Water Addition | Net | | |
| 3778-126 | 3573-55-1 | 3778-122 Elutriation underflow and minus 300 µm | E. Simpson, M. Esquibel | Attrition with water only to remove organic material from soil | 10 | none | 750.0 | 321.4 | na | 36.2 | 1,108 | 67.7 | |
| 3778-127 | 3573-55-1 | 3778-122 Elutriation underflow and minus 300 µm | E. Simpson, M. Esquibel | Attrition with Citrikleen (2% by weight) to remove organic material from soil | 10 | Citrikleen | 750.0 | 315.0 | 6.4 | 76.8 | 1,148 | 65.3 | Black streaks formed on sides of cell, difficult to remove during cleanout |
| 3778-128 | 3573-55-1 | 3778-122 Elutriation underflow and minus 300 µm | E. Simpson, M. Esquibel | Attrition with BioSolve (2% by weight) to remove organic material from soil | 10 | BioSolve | 750.0 | 315.0 | 6.4 | 92.7 | 1,164 | 64.4 | Foamed on top of sample during attrition |
| 3778-129 | 3573-55-3 | 3778-123 Elutriation underflow and minus 300 µm | M. Esquibel, C. Rich | Repeat test 3778-126 on sample 3573-55-3 | 10 | none | 750.0 | 321.4 | na | 41.8 | 1,113 | 67.4 | |
| 3778-130 | 3573-55-3 | 3778-123 Elutriation underflow and minus 300 µm | A. Johnson, M. Esquibel, E. Simpson | Repeat test 3778-127 on sample 3573-55-3 | 10 | Citrikleen | 750.0 | 315.0 | 6.4 | 88.9 | 1,160 | 64.6 | No black streaks |
| 3778-131 | 3573-55-3 | 3778-123 Elutriation underflow and minus 300 µm | E. Simpson, A. Glass | Repeat test 3778-128 on sample 3573-55-3 | 10 | BioSolve | 750.0 | 321.4 | 6.4 | 35.0 | 1,113 | 67.4 | Foamed on top of sample during attrition |

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# Photographic Log of

# Soil Washing Bench Scale Test

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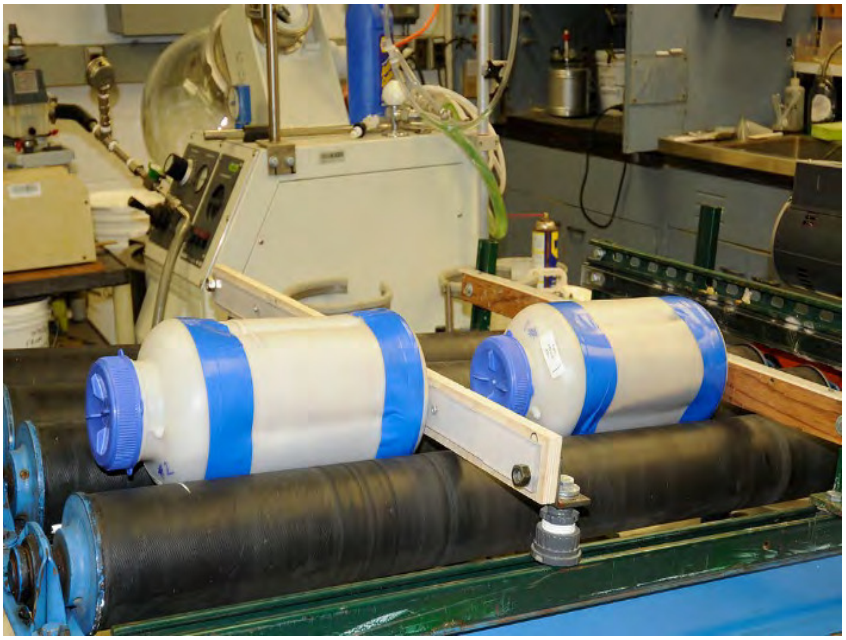

**Photo A-1.** Bench Scale Trommel Washing Roller Apparatus (operating conditions: 40% solids rolled for 40 minutes). The dimples in the vessel simulate a washing drum by picking up the solids and dropping them for agitation.

**Photo A-2.** Wet sand after dry screening of 3/8-inch (10-millimeter [mm]) material to remove cobbles.

**Photo A-3.** -200 mesh (74 micron) fines screened from -10mm fraction. The dry weight of the solids will determine the percentage of fines in the soil and minimization of contaminated soil that can be achieved by physical separation.

**Photo A-4.** Standard vibrating screen equipment for wet screening.

**Photo A-5.** -10mm +850 micron fraction screened from the feed after fines removal. This fraction was not treated further because it was difficult to remove it in the elutriation column.

**Photo A-6.** Elutriation column approximately 10 feet long with 6-inch diameter. Test conditions were 8 gallons per minute (gpm) for 10 minutes (80 gallons of water) for a 1 kilogram sample of -850 micron +300 micron material.

**Photo A-7.** Elutriation column, showing fines elutriated from the suspended bed.

**Photo A-8.** Elutriation test controlled by visual observation requiring several test runs to optimize conditions. The separation of coarse particles from fines is complete when no solids are “panned” from the overflow.

**Photo A-9.** Elutriated solids appear to be clear of humic material.

**Photo A-10.** Attrition scrubber has blades with opposing pitch to circulate the solids within the container.

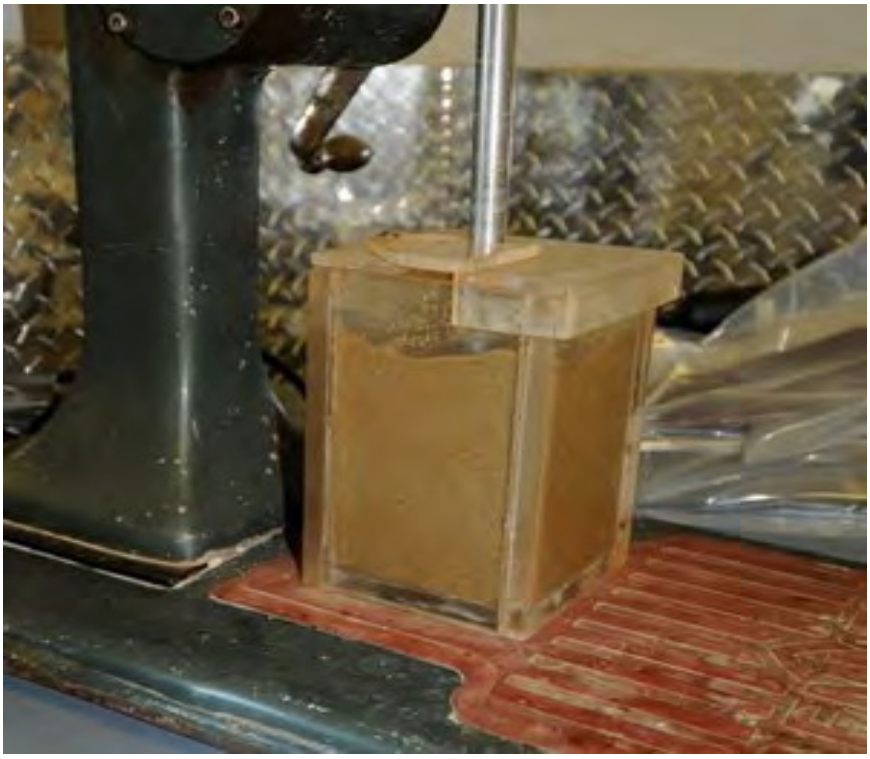

**Photo A-11.** Operating conditions are 750 grams of solids at 70% solids for 10 minutes, with additional water added to mobilize material settled out in bottom corners of the vessel.

**Photo A-12.** Settled fines recovered from two 55-gallon drums holding the elutriation column overflow by decanting the water.

**Photo A-13.** Elutriation Column.

**Photo A-14.** +850 micron elutriation feed material.

**Photo A-15.** -850 micron +300 micron elutriation overflow material.

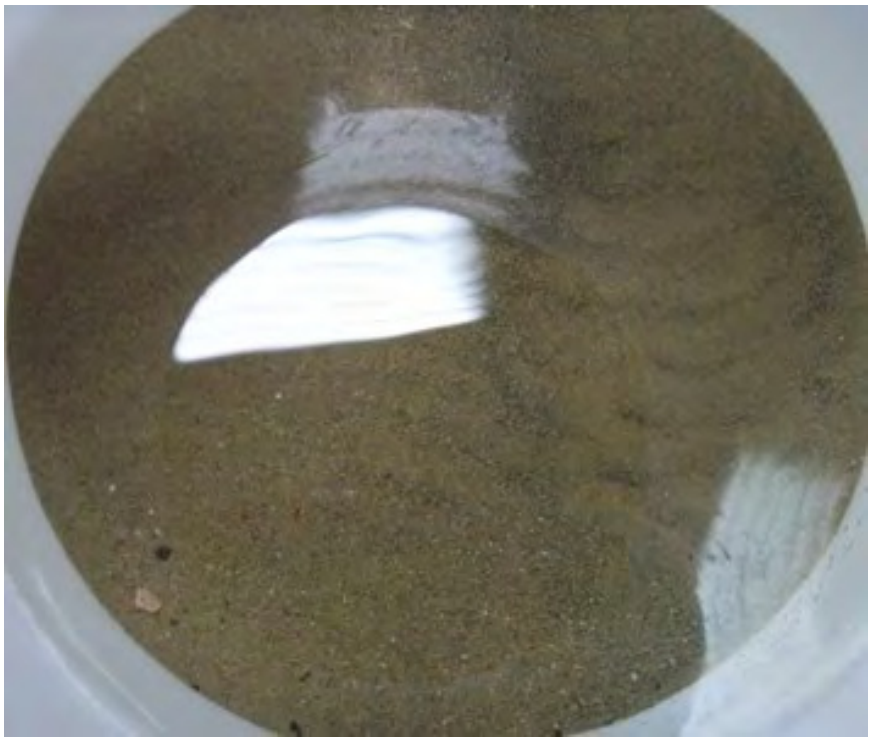

**Photo A-16.** -300 micron elutriation underflow material.

**Photo A-17.** -300 micron elutriation overflow material.

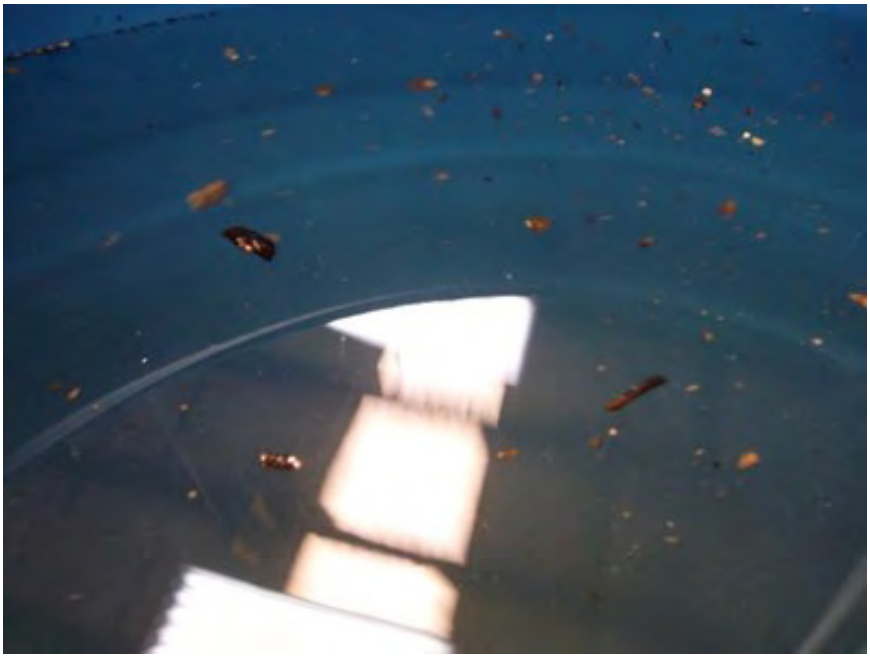

**Photo A-18.** Elutriation overflow organic material.

**Photo A-19.** -850 micron +300 micron elutriation underflow material.

**Photo A-20.** Attrition scrubbing, with 750-gram sample (dry weight) at 70% solids – water + 2% Citrikleen solution. Black, possibly organic material was observed sticking to the sides of the chamber (sample was from 0 to 5 feet below ground surface [bgs]).

# Appendix B
# Hazen Thermal Desorption Bench Scale Report and Photographic Log

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HAZEN RESEARCH, INC.

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Phone: (303) 279-4501 • Fax: (303) 278-1528
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September 8, 2014

**E-mail Delivery**

Ms. Sarah Vaughn
CH2M HILL
2485 Village View Drive, Suite 350
Henderson, NV 89074

Subject: Thermal Treatment of Contaminated Soils
Hazen Project 11827
Report and Appendices A–F

Dear Ms. Vaughn:

In May 2014, Hazen Research, Inc. initiated a laboratory thermal treatment program for evaluating removal of volatile contaminants from selected soil samples. The soil samples were collected from the Santa Susana Field Laboratory (SSFL) located in Ventura County, California. Thermal desorption is a candidate for processing the soil to remove contaminants to acceptable levels so that the soil can be returned to the site and present no hazard to the public. This report summarizes the work that was completed during the thermal treatment campaign. Throughout the course of the program, data and preliminary results were transmitted via e-mail and periodic teleconferences and meetings. All pertinent data have also been included in the appendices.

## INTRODUCTION AND BACKGROUND

CH2M HILL first contacted Hazen in December 2013 regarding their interest in evaluating removal of volatile compounds from contaminated soils at SSFL. The soils were scheduled for collection at different depths from the Alpha Bravo Fuel Farm (ABFF) site. The ABFF site was built in 1955 and was used to store various petroleum-based fuels used by NASA for testing. Over the years, spills have occurred, which entered the surrounding area. Soil decontamination is currently being pursued. Thermal desorption is one option for removing the hazardous compounds from the soil. A second option, also conducted at Hazen, used soil washing techniques to eliminate contaminants. The soil washing program was reported under separate cover.[1]

[1]Justin R. Feis and Dennis M. Johnson, "Bench-Scale Washing of Soils from Santa Susana Field Laboratory in Ventura County, California" (company report, project 11838, Hazen Research, Inc., September 4, 2014).

## SUMMARY

Hazen received two samples from the ABFF site for thermal desorption experiments. The two samples were taken from depths of 0–5 and 5–9.75 ft. Based on the preliminary results received from Calscience Environmental Laboratories, Inc. (Garden Grove, California), the 0–5 ft sample contained the majority of the hydrocarbons that needed to be removed. Additionally, it appears that the hydrocarbons are mainly large carbon chain species ranging from C21 to C40.

Hazen conducted eight desorption experiments in a 4 in. diameter batch kiln system. Four experiments were performed on each of the two samples. The four experimental variables were defined prior to testing as two temperatures and two retention times. Thermogravimetric analysis (TGA) showed that desorption started around 250°C and was finished by 550°C. The two retention times tested, 15 and 30 min (at temperature), were based on previous experience with the desorption process.

Upon completion of the desorption experiments, the residues were sent to an outside lab (Calscience) for evaluation of remaining hydrocarbons. The results showed reductions of greater than 95.9% and greater than 96.9% for C21–C30 and C30–C40 hydrocarbons, respectively, from the 0–5 ft soil at 550°C for both retention times. In addition, the C21–C40 hydrocarbons were reduced to below the detection limit of 1.6 mg/kg for calcines generated in all experiments with the 5–9.75 ft soil. Analysis was also performed to determine if C8–C20 hydrocarbons were desorbed. However, very little (<1.7 mg/kg) were present in the soil at both depths for C8–C11, C12–C14, and C15–C20.

## SAMPLE DESCRIPTION AND CHARACTERIZATION

Soil samples arrived at Hazen in six coolers on May 9, 2014, and included samples for both the thermal treatment and washing programs. Hazen assigned sample identifications to each upon arrival. The soil samples that were used for the thermal desorption experiments were collected from two depths at the ABFF, 0–5 ft and 5–9.75 ft. Table 1 shows the Hazen ID (HRI), CH2M HILL ID, collection depth, and mass for samples used in the thermal program. CH2M HILL reportedly conducted a preliminary evaluation from a field sample aliquot of the soils to confirm the presence of total petroleum hydrocarbons (TPH) prior to dispatching the samples to Hazen.

**Table 1. Sample Labeling, Depths, and Weights**

| HRI | Client ID | Depth, ft | Weight, kg |
|---|---|---|---|
| 53934-0002 | ABBS1018S101 | 0–5 | 24.45 |
| 53934-0006 | ABBS1018S201 | 5–9.75 | 24.15 |

Hazen prepared analytical aliquots of the soils for selected physical measurements, as well as aliquots for analysis by outside testing laboratories. The Hazen analyses included as-received moisture, bulk density, and angle of repose; measurements were made on as-received and dried soils. For the physical

measurements, a split of each soil sample was dried at 80°C to determine the moisture content and to generate a dried sample for the remaining measurements. The 80% passing size ($P_{80}$), loose and packed bulk density, and angle of repose results are shown in Table 2. Particle size distribution (PSD) graphs are in Appendix A.

**Table 2. Soil Physical Measurements**

| Sample | Moisture, % | $P_{80}$, µm | Bulk Density, g/cm$^3$ | | Angle of Repose, ° |
|---|---|---|---|---|---|
| | | | Loose | Packed | |
| 53934-0002 as received | 5.9 | 2,000 | 1.06 | 1.36 | 40 |
| 53934-0002 dried | | 1,360 | 1.21 | 1.46 | 34 |
| 53934-0006 as received | 6.1 | 2,560 | 1.09 | 1.44 | 41 |
| 53934-0006 dried | | 1,530 | 1.40 | 1.55 | 34 |

A TGA was performed on an as-received portion from each of the soil samples. The TGA measured the weight change of a sample as it was heated to a target temperature. The TGA was used as the initial desorption data indicating when weight loss occurred as the soil samples were heated to 600°C. In general, the TGA showed that both soil samples responded similarly. A majority of the weight loss (6–7%) occurred at about 100°C and was complete by about 200°C, and a minor weight loss (1–2%) occurred as the temperature increased to 600°C. The highest rate of weight change occurred at about 125°C for both samples. There was a small increase in the rate of weight change for both samples, at 479°C for the 0–5 ft sample and at 491°C for the 5–9.75 ft sample. Overall, the deeper soil (5–9.75 ft) lost slightly more weight, ending with an approximately 8.5% weight loss, while the 0–5 ft soil lost a total of 7.8% of its original weight. The TGA thermograms are shown in Figures 1 and 2.

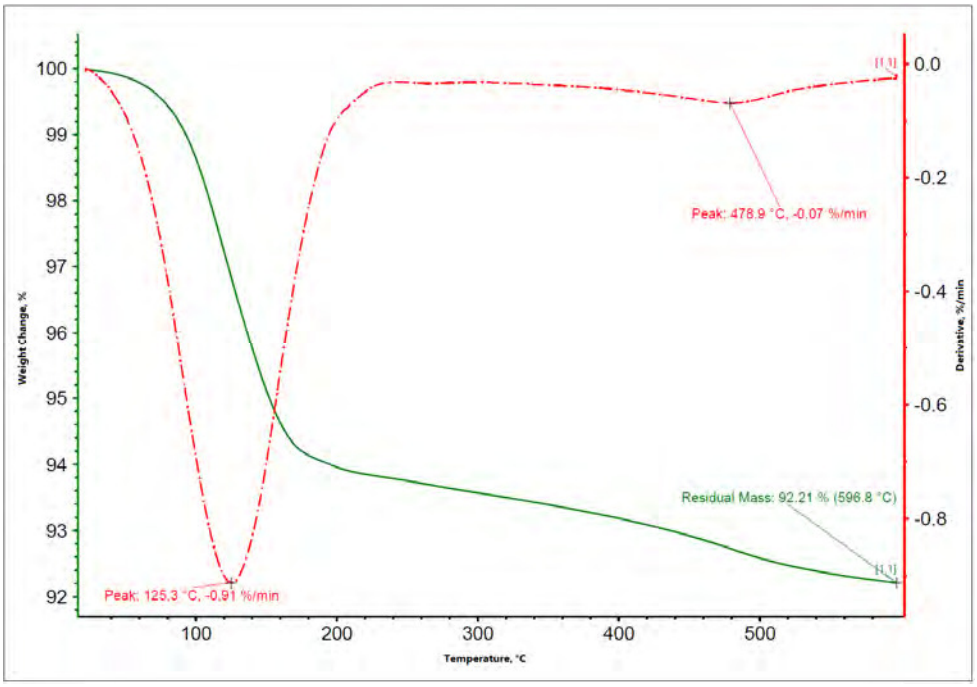



**Figure 1. TGA Thermogram for 0–5 ft Sample Heated in $N_2$ at 10°C/min to 600°C**

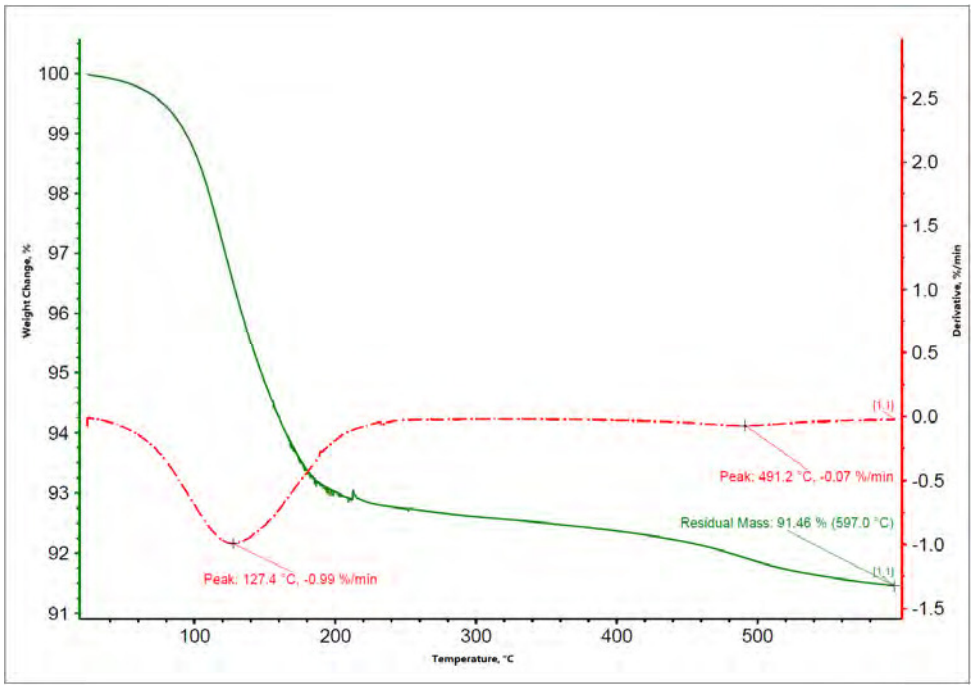



**Figure 2. TGA Thermogram for 5–9.75 ft Sample Heated in $N_2$ at 10°C/min to 600°C**

## THERMAL PROCESSING EQUIPMENT AND PROCEDURES

### BATCH KILN PROCESSING

The thermal treatment experiments were conducted with a 4 in. diameter quartz kiln system. The batch kiln consisted of a quartz tube that was expanded to a 4 in. diameter section in the middle to form a containment chamber, which was about 14 in. long. The chamber had numerous small dimples depressed into the glass during manufacture to fashion lifters to aid in mixing. The inlet and outlet ends of the kiln were 1 in. diameter, concentrically attached tubes with ground-glass fittings that created a rotation joint to form a seal. The kiln was positioned in a horizontal split-shell furnace.

Adjusting the flow of $N_2$ from a compressed gas cylinder with a mass flow meter provided the sweep gas that conveyed the volatile vapors from the soil. The sweep gas rate was 1.5 sL/min. A variable-speed gear motor was engaged to a sprocket on the kiln; this combination controlled the rotational speed of the kiln. The sample was placed in the kiln prior to heatup and was heated to the target temperature in the kiln.

Thermocouples that were positioned in the split-shell furnace and in the test charge monitored the temperature during each experiment. The process offgas was directed into two condensers in series and then into a bubbler (containing water) to provide the system with slight backpressure. A slipstream of process gas (upstream of the scrubber) was directed into a continuous monitor for determining the $H_2$, $CO_2$, $CH_4$, and CO contents. Before each day of testing, analyzers were adjusted to zero and calibration values using certified gas mixtures. The temperature and gas composition measurements were continuously recorded with a data acquisition system and were monitored from a computer screen. A photograph of the batch kiln system is shown in Figure 3. Additional photographs of the system are in Appendix B.

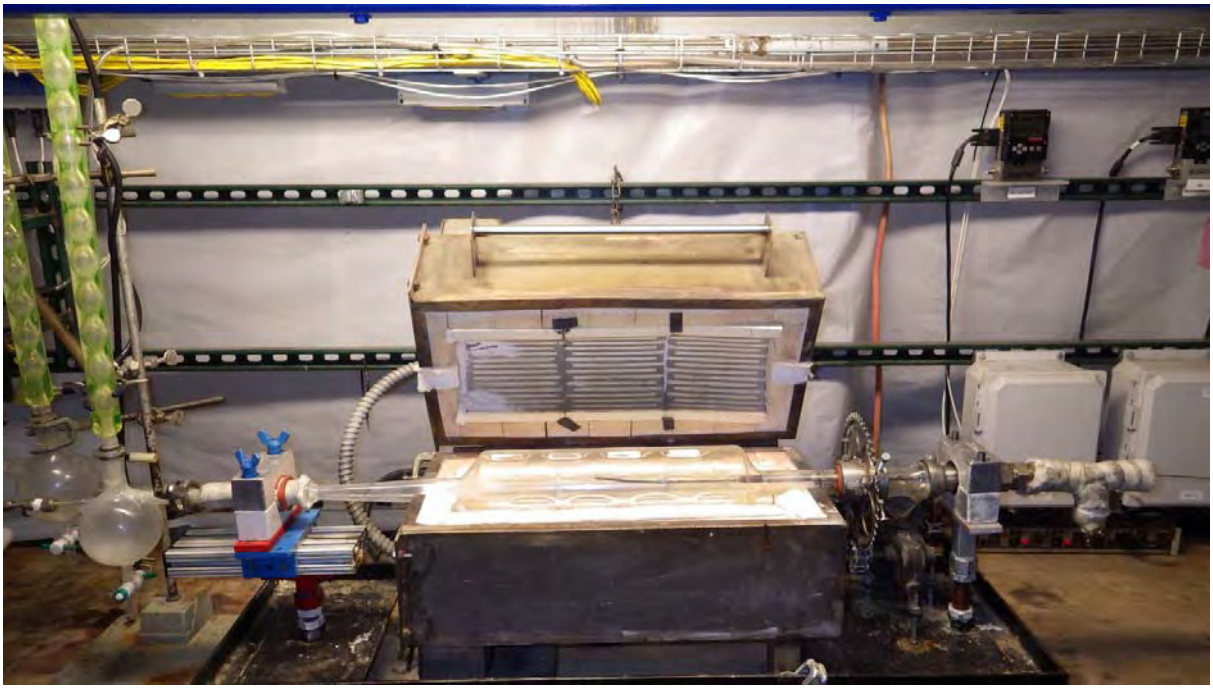


**Figure 3. Photograph of Overall Batch Kiln System**

The operating plan involved thermal treatment of the selected soil sample in the quartz kiln, followed by recovery and shipment of the residue to an outside vendor for selected hydrocarbon analysis (C8–C40). The 500 g charge of contaminated soil was loaded into the kiln and heated to the target temperature while adjusting the kiln rotation and sweep gas flow of $N_2$. When the temperature stabilized to within 10°C of the target temperature, the retention time began. When the experiment was complete, the residue was cooled to ambient temperature by removing the kiln from the furnace and placing it into a holding rack. Nitrogen purging continued during the cooling process. After the cooling period was complete, the soil was placed in an argon-purged glass sample bottle and labeled with the client ID for shipment. Individual experiment data sheets and graphs of digital data (temperature and gas composition) are in Appendix C.

Eight kiln runs were performed to evaluate the effect of temperature (250 and 550°C (482 and 1,022°F)) and retention time (15 and 30 min). The sweep gas was 100% $N_2$ for all testing. The weight losses determined from the kiln experiments were similar to the TGA data recorded for both samples. For the 0–5 ft sample, the weight loss was approximately 6% at 250°C and approximately 8% at 550°C for both retention times. The weight loss was slightly higher for the 5–9.75 ft sample at approximately 7% at 250°C and approximately 8% at 550°C for both retention times. A majority of the volatilized mass was collected downstream in the condensers. The pH of the condensed liquids was measured for each experiment. At the lower temperature, the condensate from experiments using the 0–5 ft sample had a pH of about 3 for both retention times, while at the higher temperature, the condensate pH was approximately 9 for both retention times. For the 5–9.75 ft soil at the lower temperature, the pH was measured at about 5 for both retention times. At the higher temperature, the pH was 9 for both retention

times. Table 3 summarizes the results for the eight experiments. The reason for the change in pH as a function of increased temperature was not investigated as part of this program.

**Table 3. Batch Kiln Roast Summary**

| Parameter | Head Sample | | BK-1 | BK-2 | BK-3 | BK-4 | BK-5 | BK-6 | BK-7 | BK-8 |
|---|---|---|---|---|---|---|---|---|---|---|
| Feed | | | | | | | | | | |
| Sample ID | 53934-002 | 53934-006 | 53934-002 | 53934-002 | 53934-002 | 53934-002 | 53934-006 | 53934-006 | 53934-006 | 53934-006 |
| Depth range, ft | 0–5 | 5–9.75 | 0–5 | 0–5 | 0–5 | 0–5 | 5–9.75 | 5–9.75 | 5–9.75 | 5–9.75 |
| Charge, g | | | 501.0 | 502.7 | 503.2 | 502.3 | 502.5 | 503.6 | 503.2 | 502.6 |
| Roast conditions | | | | | | | | | | |
| Temperature, °C | | | 250 | 250 | 550 | 550 | 250 | 250 | 550 | 550 |
| Retention time, min | | | 15 | 30 | 15 | 30 | 15 | 30 | 15 | 30 |
| Calcine wt, g | | | 467.4 | 472.7 | 463.2 | 463.7 | 467.6 | 468.4 | 462.8 | 461.7 |
| Weight loss, % | | | 6.7 | 6.0 | 7.9 | 7.7 | 6.9 | 7.0 | 8.0 | 8.1 |
| Solids analysis, mg/kg | | | | | | | | | | |
| C8–C11 | <1.7 | <1.7 | <1.6 | 3.4 | <1.6 | <1.6 | <1.6 | <1.6 | <1.6 | <1.6 |
| C12–C14 | <1.7 | <1.7 | <1.6 | <1.6 | <1.6 | <1.6 | <1.6 | <1.6 | <1.6 | <1.6 |
| C15–C20 | <1.7 | <1.7 | <1.6 | 3.0 | <1.6 | <1.6 | <1.6 | <1.6 | <1.6 | <1.6 |
| C21–C30 | 36 | 3.9 | 8.2 | 10.0 | <1.6 | <1.6 | <1.6 | <1.6 | <1.6 | <1.6 |
| C30–C40 | 48 | 3.3 | 19.0 | 11.0 | <1.6 | <1.6 | <1.6 | <1.6 | <1.6 | <1.6 |
| Desorption, % | | | | | | | | | | |
| C8–C11 | | | >12.2 | -88.1 | >13.4 | >13.1 | >12.4 | >12.5 | >13.4 | >13.5 |
| C12–C14 | | | >12.2 | >11.5 | >13.4 | >13.1 | >12.4 | >12.5 | >13.4 | >13.5 |
| C15–C20 | | | >12.2 | -65.9 | >13.4 | >13.1 | >12.4 | >12.5 | >13.4 | >13.5 |
| C21–C30 | | | 78.7 | 73.9 | >95.9 | >95.9 | >61.8 | >61.8 | >62.3 | >62.3 |
| C30–C40 | | | 63.1 | 78.5 | >96.9 | >96.9 | >54.9 | >54.9 | >55.4 | >55.5 |
| Condensate | | | | | | | | | | |
| Weight, g | | | 19.5 | 29.3 | 34.6 | 34.7 | 29.1 | 34.0 | 35.2 | 37 |
| pH | | | 3.0 | 3.0 | 9.0 | 9.0 | 5.5 | 5.0 | 9.0 | 9.0 |
| Mass accountability, % | | | 97 | 100 | 99 | 99 | 99 | 100 | 99 | 99 |

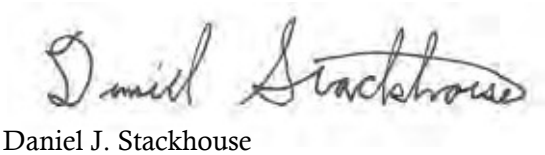
Preliminary results from Calscience indicated that reductions of greater than 95.9% to C21–C30 hydrocarbons and greater than 96.9% to C30–C40 hydrocarbons were achieved at the higher temperature, 550°C, for the 0–5 ft soil. The results also indicated that the 5–9.75 ft soil had very little C21–C40 hydrocarbons remaining (less than 1.6 mg/kg) for both temperatures. However, this soil depth had a lower initial concentration. The results also showed that the concentration of C8–C20 hydrocarbons was lower in both samples, although some C8–C20 hydrocarbons were measured in the BK-2 calcine. Desorptions of the C8–C40 hydrocarbons were calculated from the feed and calcine analyses, and are presented in Table 3.

Two tedlar bag samples were pulled during Experiments BK-4 and BK-8. The tedlar bag samples were obtained during a 5 min period when the gas analyzer indicated measurable amounts of $CH_4$, $H_2$, $CO_2$, and CO. The tedlar bag samples were taken after the condensers and before the bubbler. The times are noted in the log book in the sections for BK-4 and BK-8. The log book is in Appendix D.

Samples from all experiments, including residue, condensate, and the two gas samples, were sent to Calscience. Additionally, a duplicate split of the residue from BK-8 was sent to a secondary lab, EMAX (Torrance, California). An index of client IDs is in Appendix E. The samples were submitted to Calscience for C8–C40 hydrocarbons (by Method 8015), total solids (by Method A2540B), and TPH as gasoline (by Method 8015). The preliminary results from Calscience are in Appendix F.

We hope the information in this report is beneficial to CH2M HILL. If you have any questions or comments, please contact me. We appreciate working with CH2M HILL on this program and look forward to the opportunity to work with you again.

Regards,



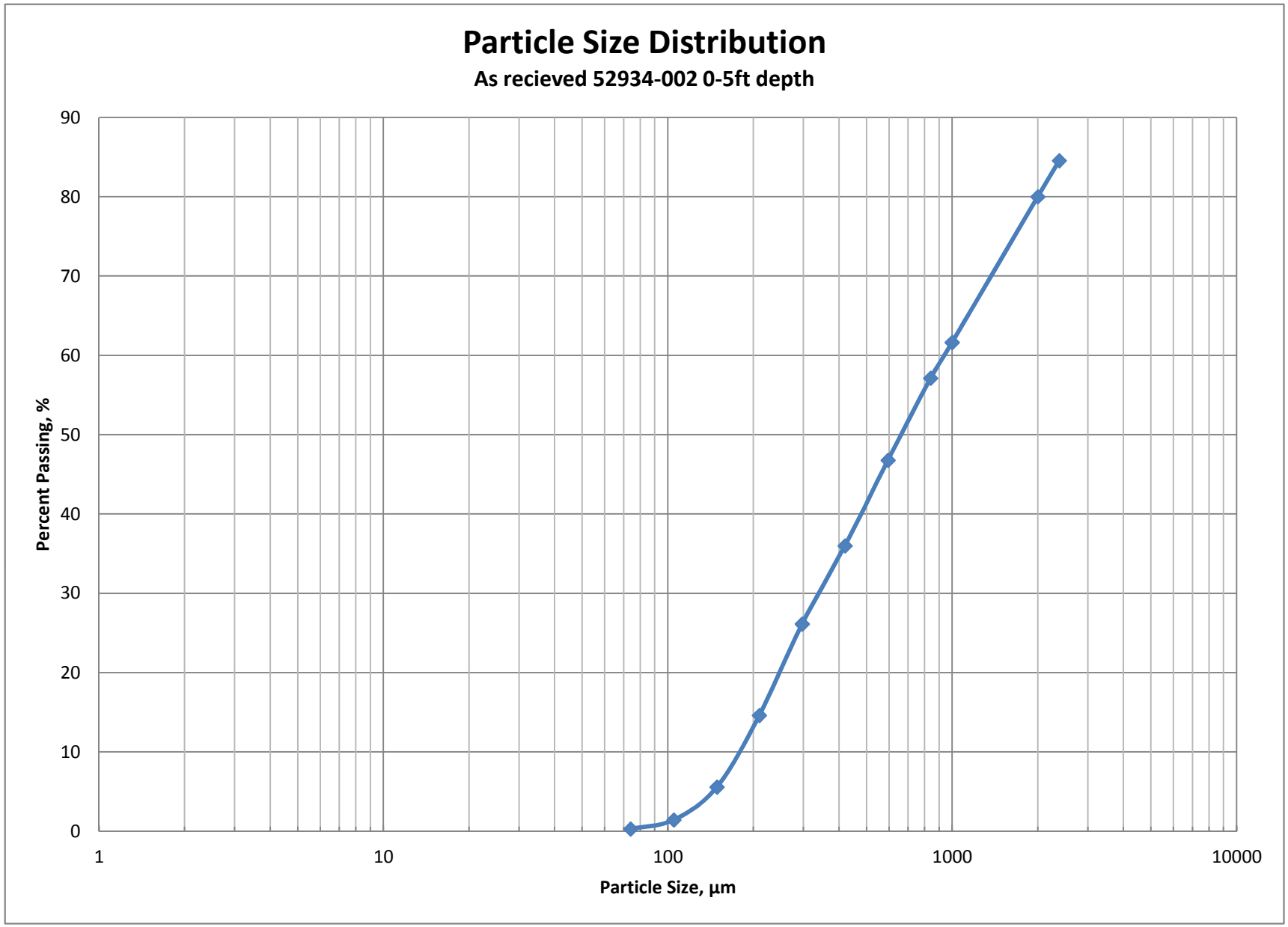
Daniel J. Stackhouse
Project Engineer

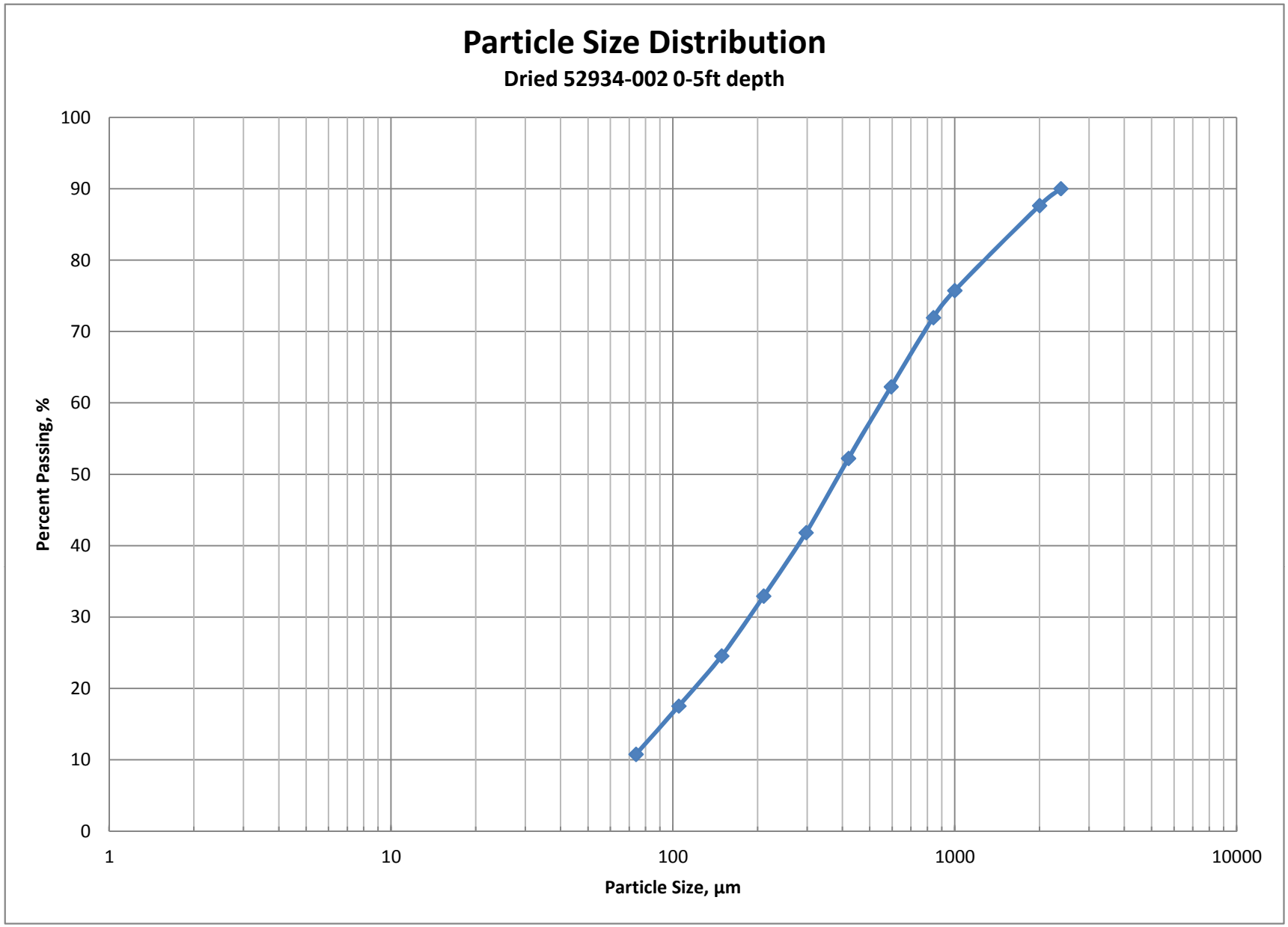
DJS/gmr

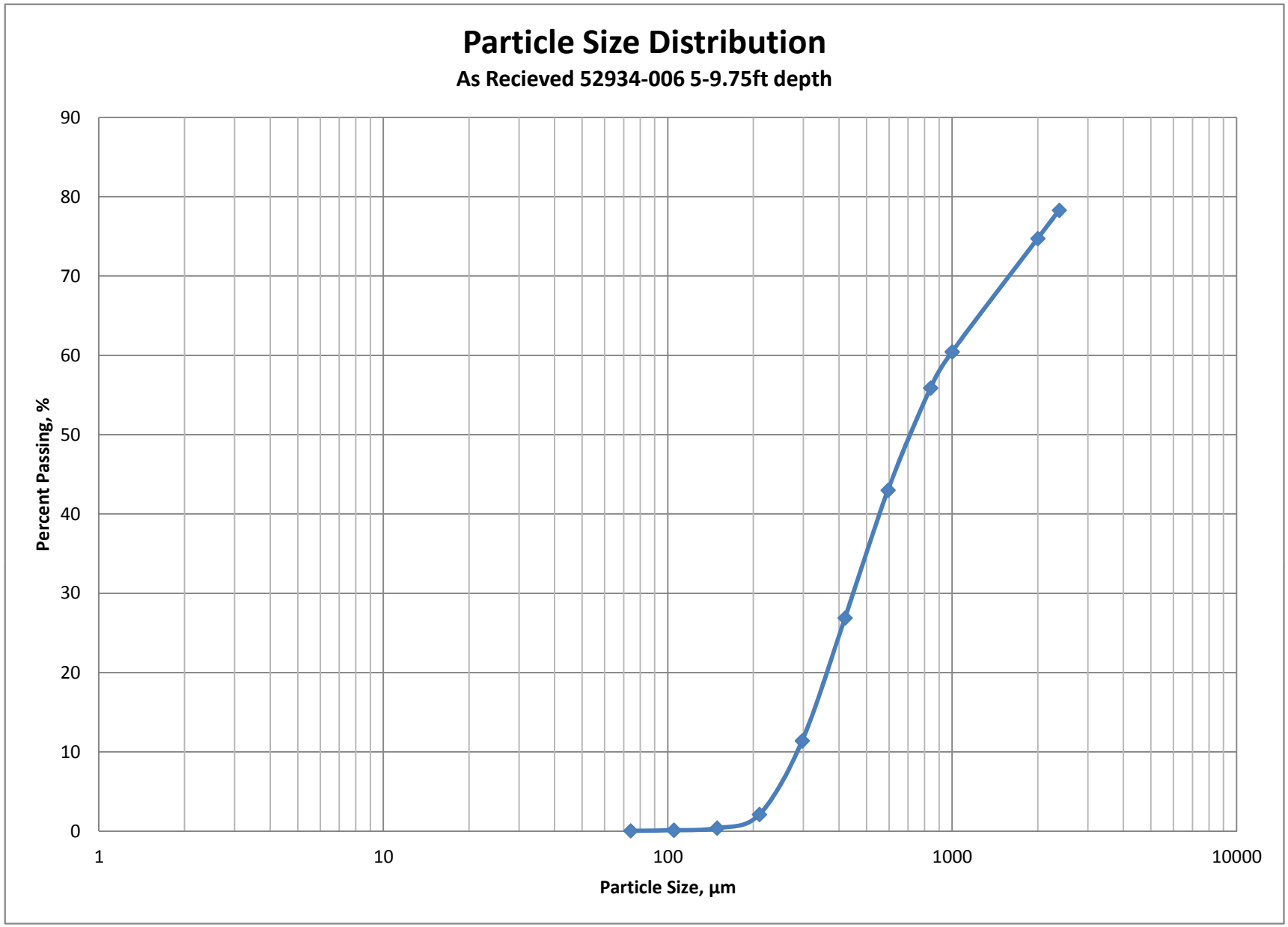
xc: Larry May, Hazen Research, Inc.

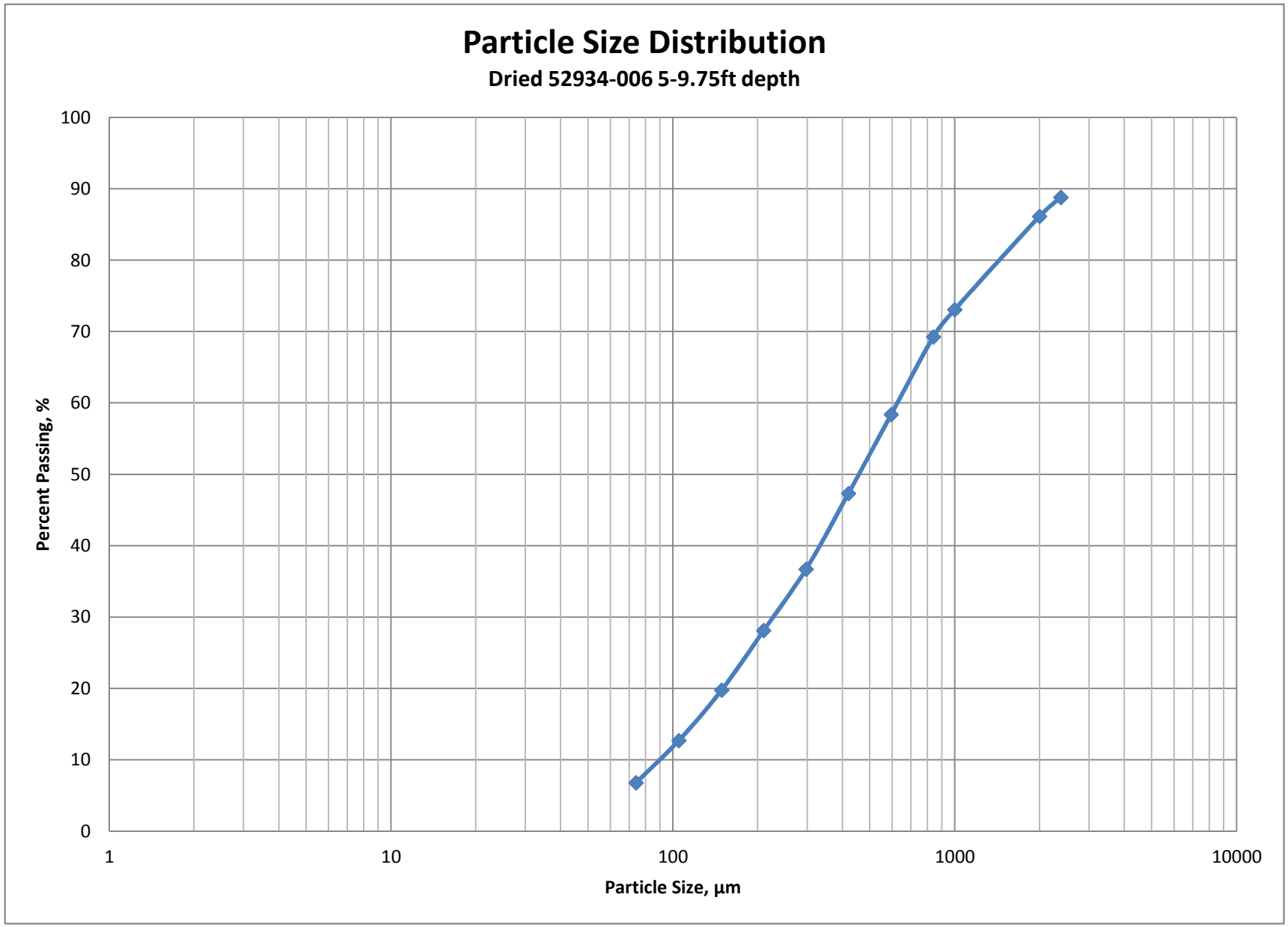
# APPENDIX A

## PSD Graphs


Particle Size Distribution
As recieved 52934-002 0-5ft depth
Percent Passing, %
90
80
70
60
50
40
30
20
10
0
1
10
100
1000
10000
Particle Size, µm


Particle Size Distribution
Dried 52934-002 0-5ft depth
Percent Passing, %
100
90
80
70
60
50
40
30
20
10
0
1
10
100
1000
10000
Particle Size, µm


Particle Size Distribution
As Recieved 52934-006 5-9.75ft depth
Percent Passing, %
90
80
70
60
50
40
30
20
10
0
1
10
100
1000
10000
Particle Size, µm


Particle Size Distribution
Dried 52934-006 5-9.75ft depth
Percent Passing, %
100
90
80
70
60
50
40
30
20
10
0
1
10
100
1000
10000
Particle Size, µm

# APPENDIX B

## Photographs of the Batch Kiln System

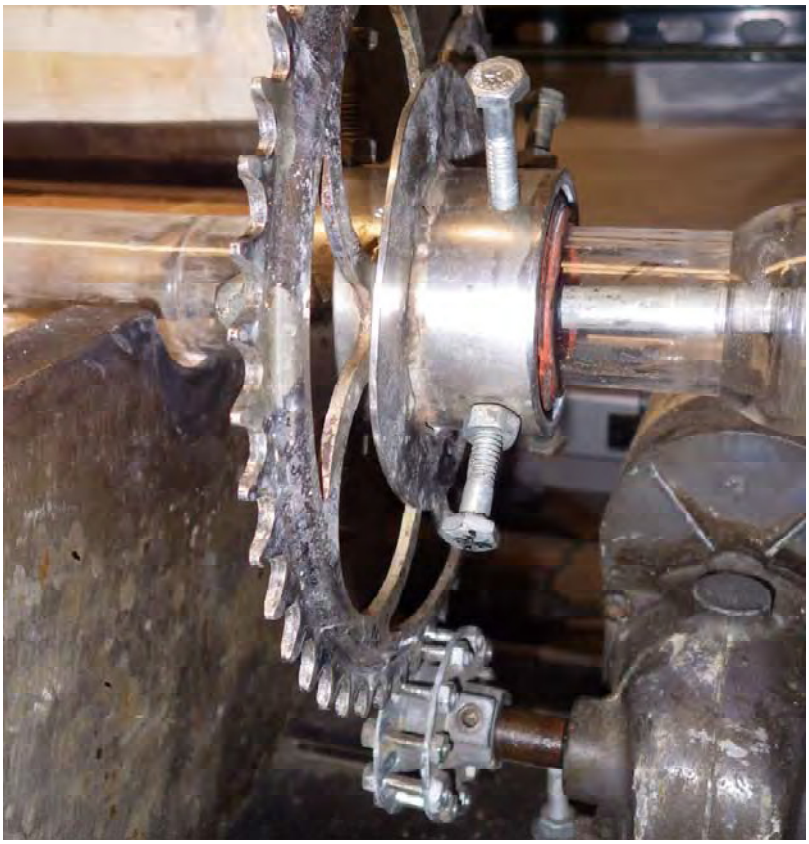


Figure B1. Kiln Drive Motor and Gearing

Figure B2. Mass Flow Controller

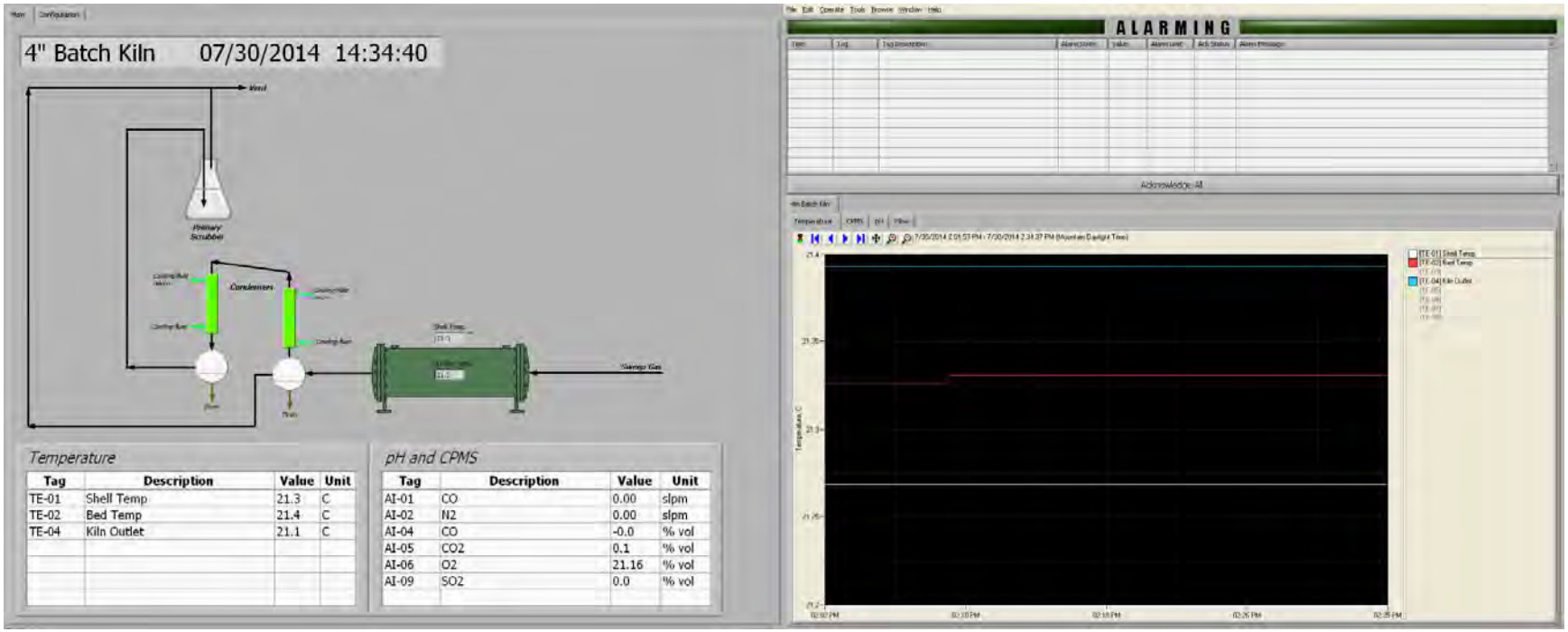

4" Batch Kiln 07/30/2014 14:34:40
Temperature
Tag Description Value Unit
TE-01 Shell Temp 21.3 C
TE-02 Bed Temp 21.4 C
TE-04 Kiln Outlet 21.1 C
pH and CPMS
Tag Description Value Unit
AI-01 CO 0.00 slpm
AI-02 N2 0.00 slpm
AI-04 CO -0.0 % vol
AI-05 CO2 0.1 % vol
AI-06 O2 21.16 % vol
AI-09 SO2 0.0 % vol
ALARMING

Figure B3. Batch Kiln Human–Machine Interface

# APPENDIX C

## Processing Data Sheets and Graphs

Project #: 11827
Date: 5-23-14
Test ID: BK-1
Operator: CP

**4-INCH BATCH QUARTZ KILN**
**Data Sheet**

Feed: 53934-002 0-5
Temperature: 250 °C
Retention time: 15 min.
Sweep gas: $N_2$

| | Input Streams | | | | Analyzer ID -> | Discharge Streams | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | TEMPERATURES | | GAS FLOWS | | PRESS. | Al-04 | Al-05 | Al-06 | Al-07 | |
| | | | | | | OFF GAS | | | | Comments |
| Time | Furnace Shell | Furnace Burden | $N_2$ | | Kiln | $CH_4$ | $CO_2$ | CO | $H_2$ | |
| Units -> | °C | °C | lpm | | "$H_2O$ | vol % | vol % | vol % | vol % | |
| 0820 | 19.6 | 15.2 | 1.5 | | 2.5 | 0.0 | 0.0 | 0.0 | 0.0 | Start Heating |
| 0830 | 240.1 | 94.6 | 1.5 | | 2.5 | 0.0 | 0.0 | 0.0 | 0.0 | |
| 0840 | 249.7 | 200.3 | 1.5 | | 2.5 | 0.0 | 0.3 | 0.0 | 0.0 | |
| 0847 | 252.4 | 240.6 | 1.5 | | 2.5 | 0.0 | 0.5 | 0.0 | 0.0 | Start 15 min hold |
| 0852 | 252.6 | 250.5 | 1.5 | | 2.5 | 0.0 | 0.4 | 0.0 | 0.0 | |
| 0857 | 250.7 | 253.6 | 1.5 | | 2.5 | 0.0 | 0.3 | 0.0 | 0.0 | |
| 0902 | 249.5 | 253.2 | 1.5 | | 2.5 | 0.0 | 0.1 | 0.0 | 0.0 | End test cool with $N_2$ |

**Kiln:**

Initial gross, g 2227.4
Tare, g 1726.4
Net wt, g 501.0

Final gross, g 2193.8
Tare, g 1726.4
Net wt, g 467.4

**Scrubber:**

Concentration $H_2O$
Initial 783.1
Final 784.7
Difference 0.4
pH

Condensate, g 19.45

Project #: 11827
Date: 5-23-14
Test ID: BK-2
Operator: cp

# 4-INCH BATCH QUARTZ KILN
## Data Sheet

Feed: 53934-002 0-5
Temperature: 250 °C
Retention time: 30 min.
Sweep gas: $N_2$

| | Input Streams | | | | | Discharge Streams | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | TEMPERATURES | | GAS FLOWS | | Analyzer ID -> PRESS. | AI-04 | AI-05 | AI-06 | AI-07 | Comments |
| | | | | | | OFF GAS | | | | |
| Time | Furnace Shell | Furnace Burden | $N_2$ | | Kiln | $CH_4$ | $CO_2$ | CO | $H_2$ | |
| Units -> | °C | °C | lpm | | "$H_2O$ | vol % | vol % | vol % | vol % | |
| 1015 | 71.4 | 35.0 | 1.5 | | 2.8 | 0.0 | 0.0 | 0.0 | 0.0 | Start heating 1.5 slpm $N_2$ |
| 1025 | 243.4 | 106.1 | 1.5 | | 2.8 | 0.0 | 0.0 | 0.0 | 0.0 | |
| 1035 | 248.1 | 217.5 | 1.5 | | 2.8 | 0.0 | 0.4 | 0.0 | 0.0 | |
| 1041 | 248.6 | 240.5 | 1.5 | | 2.8 | 0.0 | 0.4 | 0.1 | 0.0 | Begin 30 min hold |
| 1051 | 248.4 | 250.4 | 1.5 | | 2.8 | 0.0 | 0.2 | 0.1 | 0.0 | |
| 1101 | 247.1 | 250.4 | 1.5 | | 2.8 | 0.0 | 0.1 | 0.1 | 0.0 | |
| 1111 | 248.0 | 249.5 | 1.5 | | 2.8 | 0.0 | 0.0 | 0.0 | 0.0 | End test Cool under $N_2$ |

**Kiln:**

Initial gross, g 2229.4
Tare, g 1726.7
Net wt, g 502.7

Final gross, g 2199.1
Tare, g 1726.7
Net wt, g 472.7

**Scrubber:**

Concentration $H_2O$ DI
Initial 797.6
Final 796.9
Difference 0.7
pH

Condensate, g 29.32

| | |
|---|---|
| Project #: | 11827 |
| Date: | 05-23-14 |
| Test ID: | BK-3 |
| Operator: | CP |

**4-INCH BATCH QUARTZ KILN**
**Data Sheet**

| | |
|---|---|
| Feed: | 53934-002 0-5 |
| Temperature: | 550 °C |
| Retention time: | 15 min. |
| Sweep gas: | $N_2$ |

| | Input Streams | | | | Analyzer ID -> | Discharge Streams | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | TEMPERATURES | | GAS FLOWS | | PRESS. | AI-04 | AI-05 | AI-06 | AI-07 | |
| | | | | | | OFF GAS | | | | |
| Time | Furnace Shell | Furnace Burden | $N_2$ | | Kiln | $CH_4$ | $CO_2$ | CO | $H_2$ | Comments |
| Units -> | °C | °C | lpm | | "$H_2O$ | vol % | vol % | vol % | vol % | |
| 1235 | 72.8 | 28.1 | 1.5 | | 2.3 | 0.0 | 0.0 | 0.0 | 0.0 | Start Heating to 550°C |
| 1245 | 289.4 | 106.3 | 1.5 | | 2.3 | 0.0 | 0.0 | 0.0 | 0.0 | |
| 1255 | 498.2 | 435.0 | 1.5 | | 2.3 | 6.3 | 4.9 | 1.1 | 0.0 | |
| 1303 | 541.5 | 541.0 | 1.5 | | 2.3 | 0.7 | 1.1 | 0.3 | 1.2 | Start 15 min Hold |
| 1308 | 542.6 | 547.4 | 1.5 | | 2.3 | 0.1 | 0.4 | 0.1 | 0.3 | |
| 1313 | 544.2 | 548.0 | 1.5 | | 2.3 | 0.0 | 0.3 | 0.1 | 0.0 | |
| 1318 | 546.0 | 548.6 | 1.5 | | 2.3 | 0.0 | 0.2 | 0.1 | 0.0 | End Heat cool under $N_2$ |

**Kiln:**

| | | | |
|---|---|---|---|
| Initial gross, g | 2230.8 | Final gross, g | 2190.8 |
| Tare, g | 1727.6 | Tare, g | 1727.6 |
| Net wt, g | 503.2 | Net wt, g | 463.2 |

**Scrubber:**

| | |
|---|---|
| Concentration | DI $H_2O$ |
| Initial | 774.3 |
| Final | 773.6 |
| Difference | 0.7 |
| pH | |

Condensate, g 34.60

Project #: 11827
Date: 5-27-14
Test ID: BK-4
Operator: CP

**4-INCH BATCH QUARTZ KILN**
**Data Sheet**

Feed: 53934-002 0-5
Temperature: 550 °C
Retention time: 30 min.
Sweep gas: $N_2$

| | Input Streams | | | | Analyzer ID -> | Discharge Streams | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | TEMPERATURES | | GAS FLOWS | | PRESS. | AI-04 | AI-05 | AI-06 | AI-07 | |
| | | | | | | OFF GAS | | | | |
| Time | Furnace Shell | Furnace Burden | $N_2$ | | Kiln | $CH_4$ | $CO_2$ | CO | $H_2$ | Comments |
| Units -> | °C | °C | lpm | | "$H_2O$ | vol % | vol % | vol % | vol % | |
| 1150 | 19.9 | 20.7 | 1.5 | | 2.5 | 0.0 | 0.0 | 0.0 | 0.0 | Start heating |
| 1200 | 246.5 | 104.4 | 1.5 | | 2.5 | 0.0 | 0.0 | 0.0 | 0.0 | |
| 1210 | 463.1 | 371.2 | 1.5 | | 2.5 | 1.6 | 5.4 | 1.3 | 0.0 | Pulling tedlar bag sample |
| 1215 | 535.4 | 515.5 | 1.5 | | 2.5 | 9.0 | 2.8 | 0.7 | 2.4 | End tedlar bag sample |
| 1220 | 541.3 | 540.2 | 1.5 | | 2.5 | 0.9 | 1.1 | 0.3 | 1.4 | Start 30 min hold |
| 1230 | 545.9 | 550.2 | 1.5 | | 2.5 | 0.0 | 0.3 | 0.1 | 0.2 | |
| 1240 | 547.7 | 550.5 | 1.5 | | 2.5 | 0.0 | 0.1 | 0.1 | 0.0 | |
| 1250 | 547.9 | 549.8 | 1.5 | | 2.5 | 0.1 | 0.1 | 0.1 | 0.0 | End test Heat off cool with $N_2$ |

**Kiln:**

Initial gross, g 2228.6
Tare, g 1726.3
Net wt, g 502.3

Final gross, g 2190.0
Tare, g 1726.3
Net wt, g 463.7

**Scrubber:**

Concentration DI $H_2O$
Initial 779.2
Final 777.8
Difference 1.4
pH

Condensate 34.65g

Project #: 11827
Date: 5-28-14
Test ID: BK-5
Operator: CP

# 4-INCH BATCH QUARTZ KILN
## Data Sheet

Feed: 53934-006 5-9.75
Temperature: 250 °C
Retention time: 15 min.
Sweep gas: $N_2$

| | | | Input Streams | | | Discharge Streams | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | TEMPERATURES | | GAS FLOWS | | Analyzer ID -> PRESS. | AI-04 | AI-05 | AI-06 | AI-07 | |
| | | | | | | OFF GAS | | | | Comments |
| Time | Furnace Shell | Furnace Burden | $N_2$ | | Kiln | $CH_4$ | $CO_2$ | CO | $H_2$ | |
| Units -> | °C | °C | lpm | | "$H_2O$ | vol % | vol % | vol % | vol % | |
| 0845 | 20.6 | 16.0 | 1.5 | | 2.5 | 0.0 | 0.0 | 0.0 | 0.0 | Start heating |
| 0855 | 239.3 | 94.6 | 1.5 | | 2.5 | 0.0 | 0.0 | 0.0 | 0.0 | |
| 0905 | 247.2 | 192.9 | 1.5 | | 2.5 | 0.0 | 0.1 | 0.0 | 0.0 | |
| 0915 | 248.4 | 240.4 | 1.5 | | 2.5 | 0.0 | 0.2 | 0.0 | 0.0 | Start 15 min Retention |
| 0920 | 248.4 | 247.9 | 1.5 | | 2.5 | 0.0 | 0.1 | 0.0 | 0.0 | |
| 0925 | 248.4 | 250.4 | 1.5 | | 2.5 | 0.0 | 0.1 | 0.0 | 0.0 | |
| 0930 | 248.4 | 251.4 | 1.5 | | 2.5 | 0.0 | 0.0 | 0.0 | 0.0 | End test, cool with $N_2$ |

**Kiln:**

Initial gross, g: 2228.9
Tare, g: 1726.4
Net wt, g: 502.5

Final gross, g: 2194.0
Tare, g: 1726.4
Net wt, g: 467.6

**Scrubber:**

Concentration: DI $H_2O$
Initial: 775.9
Final: 775.4
Difference: 0.5
pH:

Condensate, g: 29.13

Project #: 11827
Date: 5-28-14
Test ID: BK-6
Operator: CP

# 4-INCH BATCH QUARTZ KILN
## Data Sheet

Feed: 53934-006 5-9.75
Temperature: 250 °C
Retention time: 30 min.
Sweep gas: $N_2$

| | Input Streams | | | | Analyzer ID -> | Discharge Streams | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | TEMPERATURES | | GAS FLOWS | | PRESS. | AI-04 | AI-05 | AI-06 | AI-07 | |
| | | | | | | OFF GAS | | | | Comments |
| Time | Furnace Shell | Furnace Burden | $N_2$ | | Kiln | $CH_4$ | $CO_2$ | CO | $H_2$ | |
| Units -> | °C | °C | lpm | | "$H_2O$ | vol % | vol % | vol % | vol % | |
| 1035 | 76.4 | 25.8 | 1.5 | | 2.5 | 0.0 | 0.0 | 0.0 | 0.0 | Start heating |
| 1045 | 243.4 | 96.1 | 1.5 | | 2.5 | 0.0 | 0.0 | 0.0 | 0.0 | |
| 1055 | 248.4 | 207.0 | 1.5 | | 2.5 | 0.0 | 0.2 | 0.0 | 0.0 | |
| 1103 | 248.6 | 241.3 | 1.5 | | 2.5 | 0.0 | 0.2 | 0.0 | 0.0 | Start 30 min. Retention |
| 1113 | 248.3 | 251.0 | 1.5 | | 2.5 | 0.0 | 0.1 | 0.0 | 0.0 | |
| 1123 | 248.1 | 251.6 | 1.5 | | 2.5 | 0.0 | 0.0 | 0.0 | 0.0 | |
| 1133 | 248.1 | 250.9 | 1.5 | | 2.5 | 0.0 | 0.0 | 0.0 | 0.0 | End test. Cool with $N_2$ |

**Kiln:**

Initial gross, g: 2229.9
Tare, g: 1726.3
Net wt, g: 503.6

Final gross, g: 2194.7
Tare, g: 1726.3
Net wt, g: 468.4

**Scrubber:**

Concentration: DI $H_2O$
Initial: 773.6
Final: 772.7
Difference: 0.9
pH:

Condensate, g: 33.98

Project #: 11827
Date: 5-28-14
Test ID: BK-7
Operator: CP

**4-INCH BATCH QUARTZ KILN**
**Data Sheet**

Feed: 53934-006 5-9.75
Temperature: 550 °C
Retention time: 15 min.
Sweep gas: $N_2$

| | Input Streams | | | | Analyzer ID -> | Discharge Streams | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | TEMPERATURES | | GAS FLOWS | | PRESS. | AI-04 | AI-05 | AI-06 | AI-07 | |
| | | | | | | OFF GAS | | | | |
| Time | Furnace Shell | Furnace Burden | $N_2$ | | Kiln | $CH_4$ | $CO_2$ | CO | $H_2$ | Comments |
| Units -> | °C | °C | lpm | | "$H_2O$ | vol % | vol % | vol % | vol % | |
| 1345 | 61.4 | 43.8 | 1.5 | | 2.5 | 0.0 | 0.0 | 0.0 | 0.0 | Start heating to 550°C |
| 1355 | 278.1 | 106.2 | 1.5 | | 2.5 | 0.0 | 0.0 | 0.0 | 0.0 | |
| 1405 | 489.5 | 425.3 | 1.5 | | 2.5 | 0.1 | 2.7 | 0.7 | 0.0 | |
| 1414 | 541.2 | 540.6 | 1.5 | | 2.5 | 0.0 | 0.6 | 0.2 | 0.0 | Start 15 min Retention |
| 1419 | 542.3 | 546.5 | 1.5 | | 2.5 | 0.0 | 0.2 | 0.1 | 0.0 | |
| 1424 | 542.9 | 546.6 | 1.5 | | 2.5 | 0.0 | 0.1 | 0.1 | 0.0 | |
| 1429 | 544.9 | 546.9 | 1.5 | | 2.5 | 0.0 | 0.1 | 0.1 | 0.0 | End test. Cool with $N_2$ |

**Kiln:**

Initial gross, g 2229.6
Tare, g 1726.4
Net wt, g 503.2

Final gross, g 2189.2
Tare, g 1726.4
Net wt, g 462.8

**Scrubber:**

Concentration DI $H_2O$
Initial 777.9
Final 776.8
Difference 0.9
pH

Condensate g 35.24

Project #: 11827
Date: 05-29-14
Test ID: BK-8
Operator: CP

# 4-INCH BATCH QUARTZ KILN
## Data Sheet

Feed: 53934-006 5-9.75
Temperature: 550 °C
Retention time: 30 min.
Sweep gas: $N_2$

| | Input Streams | | | | Analyzer ID -> | Discharge Streams | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | TEMPERATURES | | GAS FLOWS | | PRESS. | AI-04 | AI-05 | AI-06 | AI-07 | |
| | | | | | | OFF GAS | | | | Comments |
| Time | Furnace Shell | Furnace Burden | $N_2$ | | Kiln | $CH_4$ | $CO_2$ | CO | $H_2$ | |
| Units -> | °C | °C | lpm | | "$H_2O$ | vol % | vol % | vol % | vol % | |
| 0925 | 21.5 | 15.8 | 1.5 | | 2.5 | 0.0 | 0.0 | 0.0 | 0.0 | Start heating |
| 0935 | 255.4 | 94.4 | 1.5 | | 2.5 | 0.0 | 0.0 | 0.0 | 0.0 | |
| 0945 | 469.5 | 393.0 | 1.5 | | 2.5 | 0.1 | 3.0 | 0.9 | 0.0 | |
| 0947 | 525.2 | 475.6 | 1.5 | | 2.5 | 0.4 | 2.5 | 0.6 | 0.0 | Pulling tedlar gas sample |
| 0952 | 540.3 | 536.4 | 1.5 | | 2.5 | 0.0 | 0.9 | 0.2 | 0.0 | End tedlar gas sample |
| 0954 | 541.1 | 540.5 | 1.5 | | 2.5 | 0.0 | 0.7 | 0.2 | 0.0 | Begin 30 min hold |
| 1004 | 544.2 | 548.3 | 1.5 | | 2.5 | 0.0 | 0.1 | 0.1 | 0.0 | |
| 1014 | 547.3 | 549.7 | 1.5 | | 2.5 | 0.0 | 0.0 | 0.0 | 0.0 | |
| 1024 | 549.0 | 549.5 | 1.5 | | 2.5 | 0.0 | 0.0 | 0.0 | 0.0 | End test cool with $N_2$ |

**Kiln:**

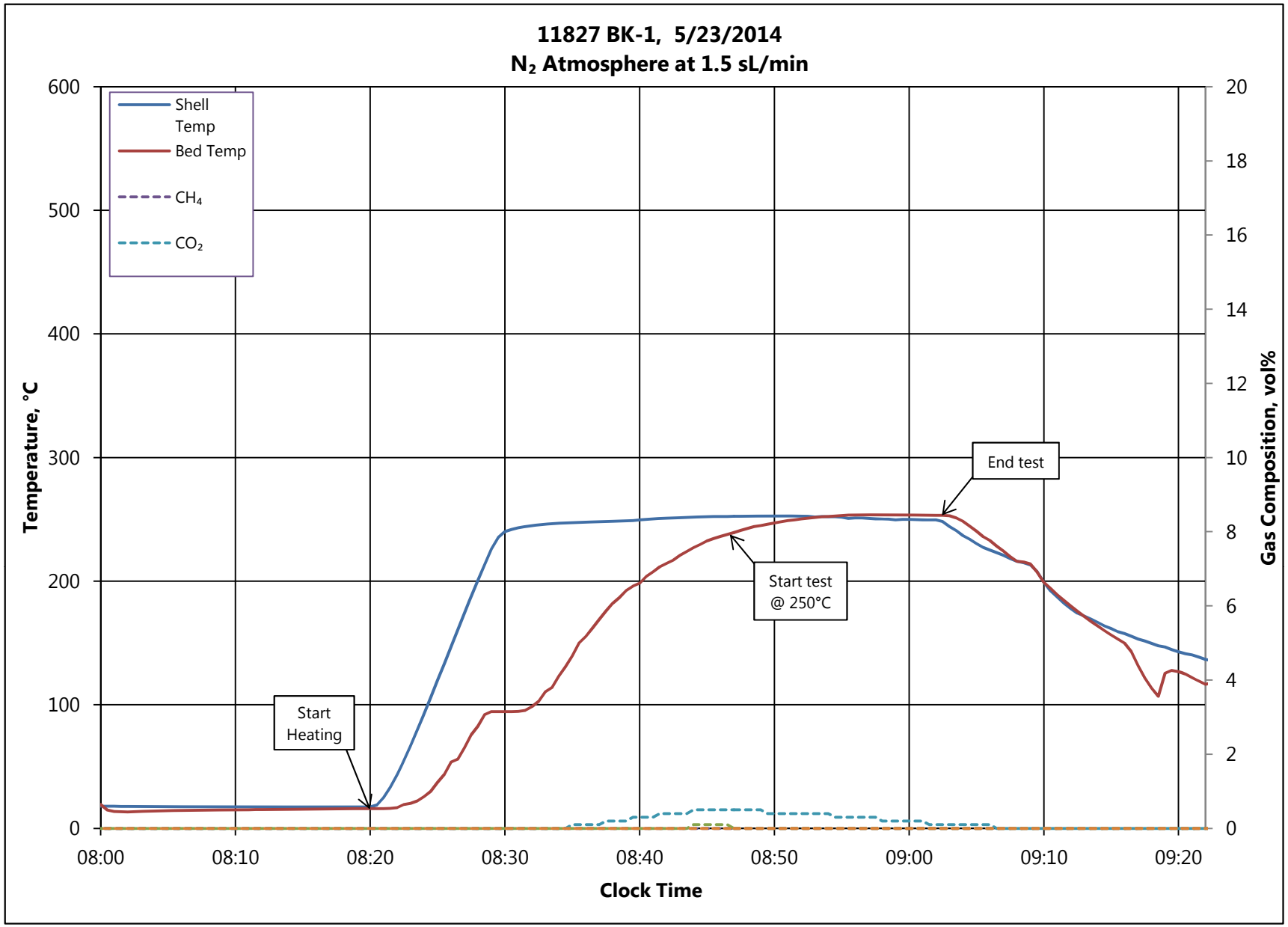
Initial gross, g: 2229.0
Tare, g: 1726.4
Net wt, g: 502.6

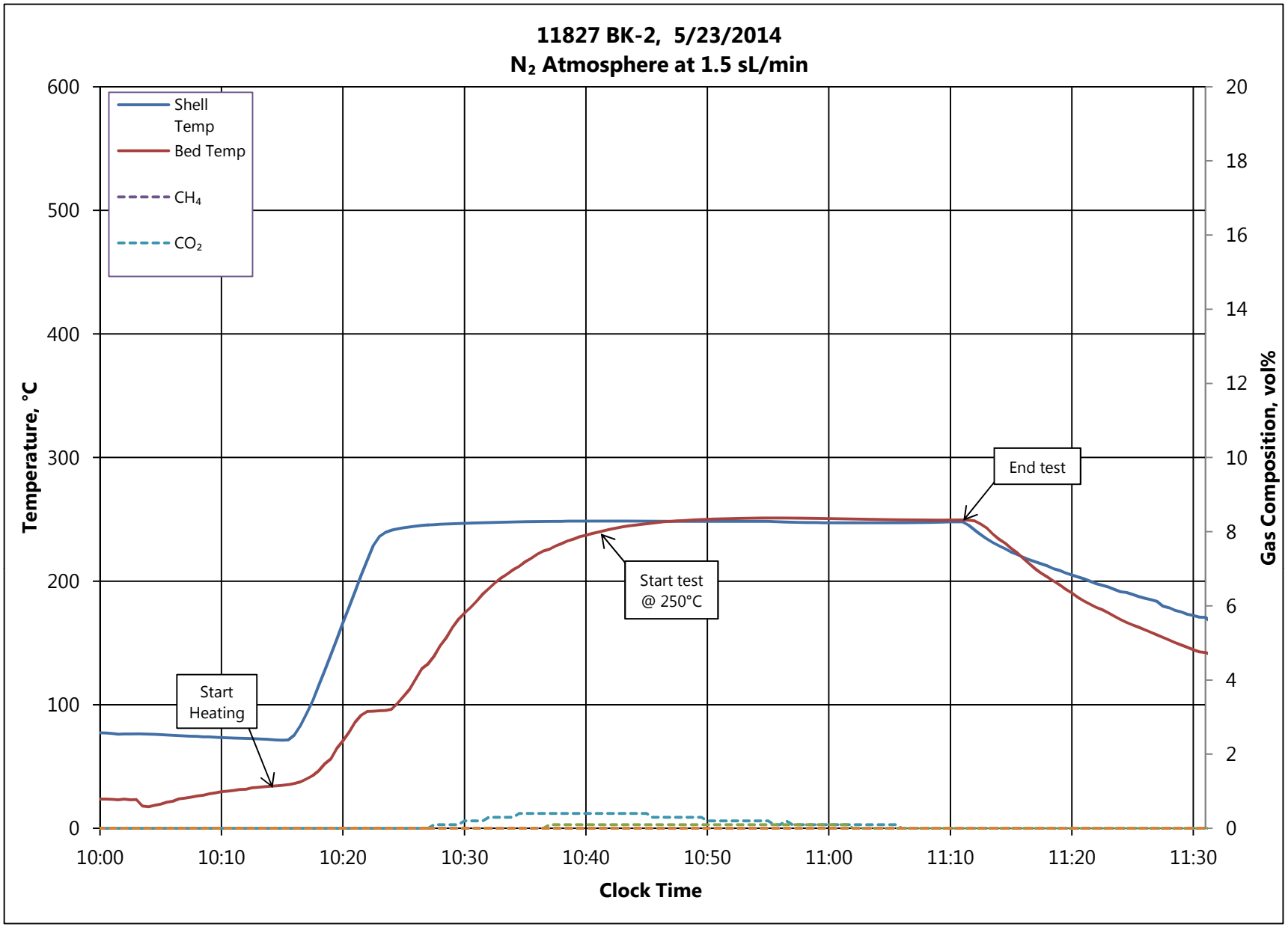
Final gross, g: 2188.1
Tare, g: 1726.4
Net wt, g: 461.7

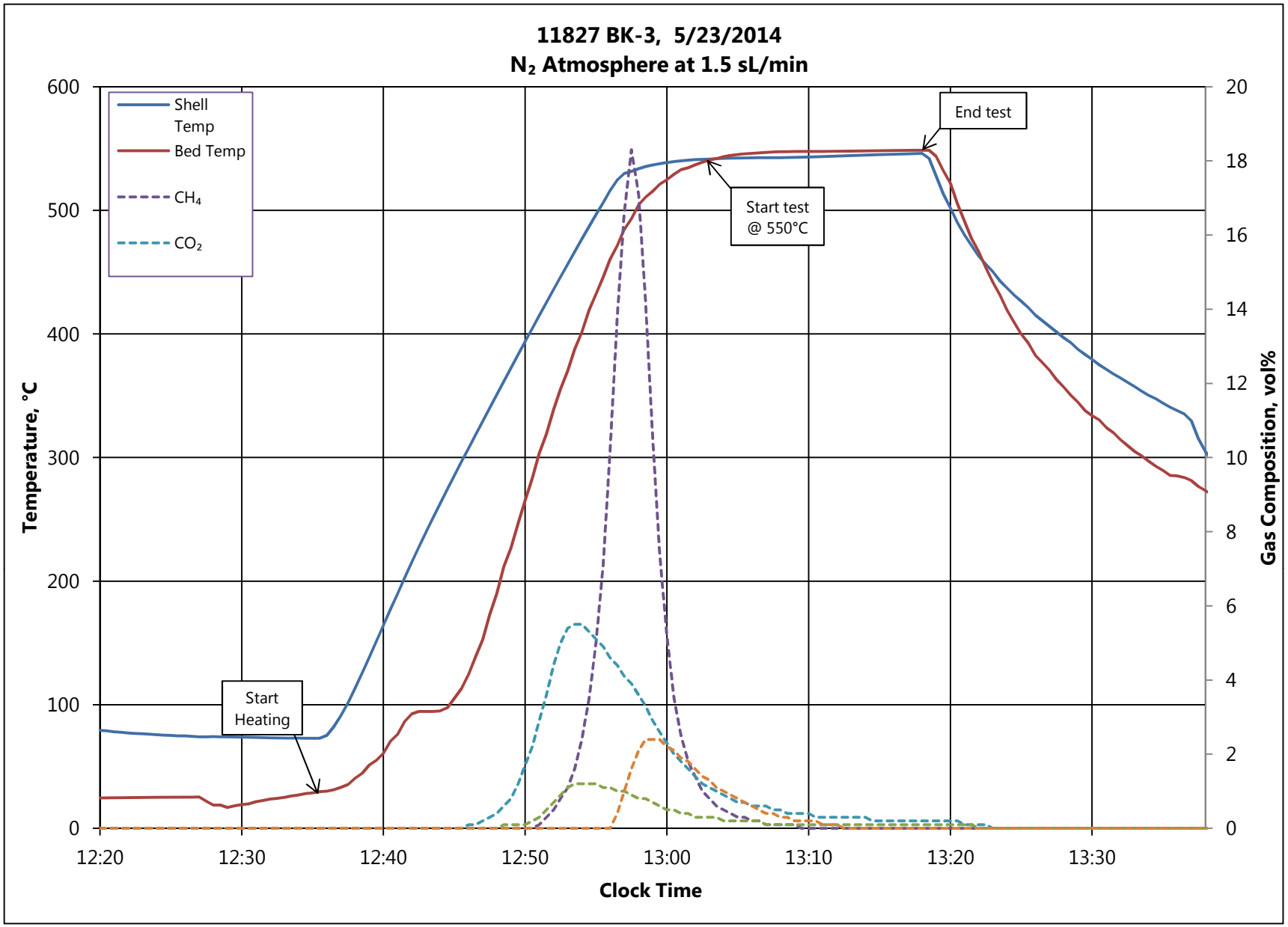
**Scrubber:**

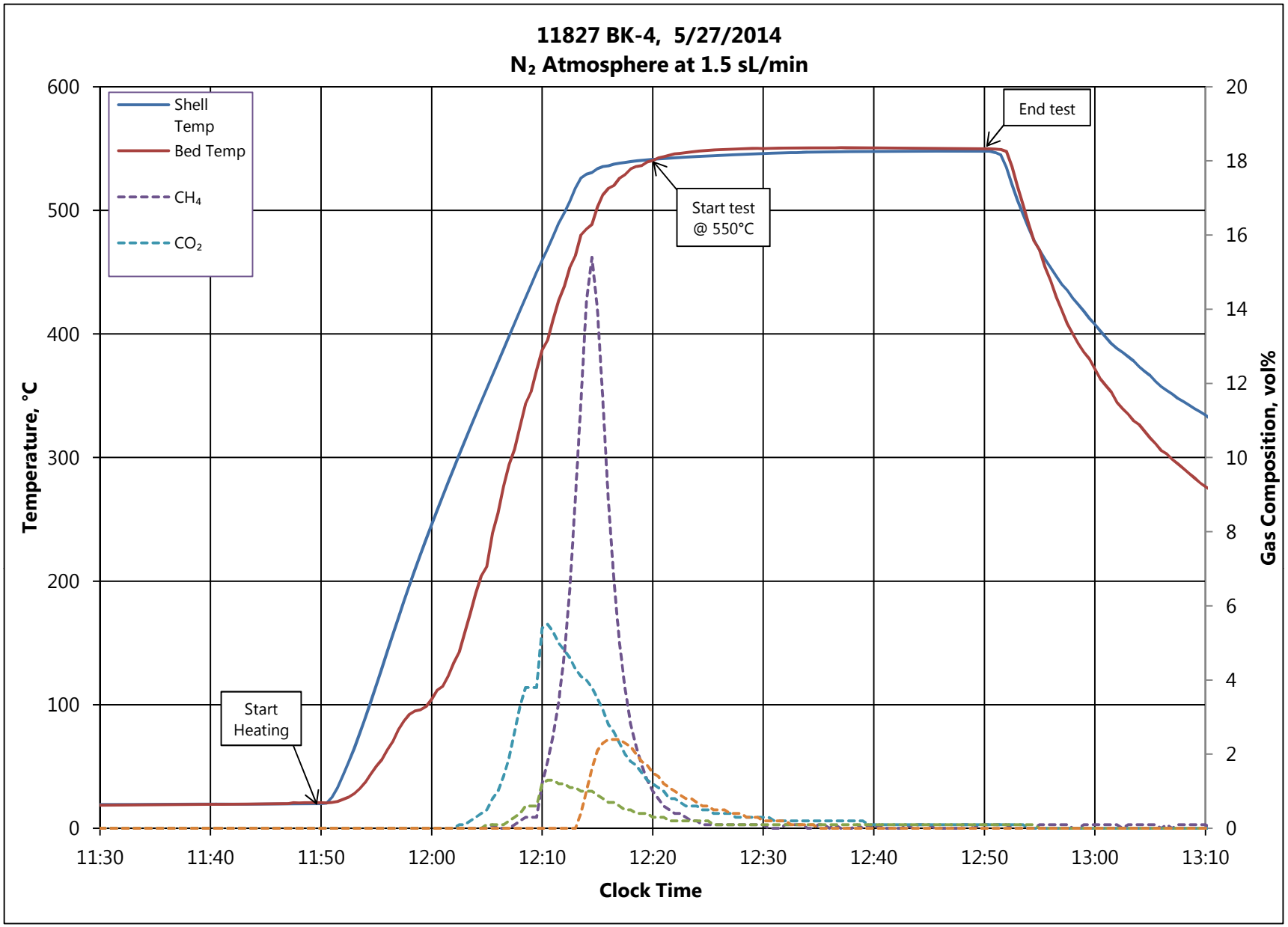
Concentration: DI $H_2O$
Initial: 776.6
Final: 775.3
Difference: 1.3
pH:

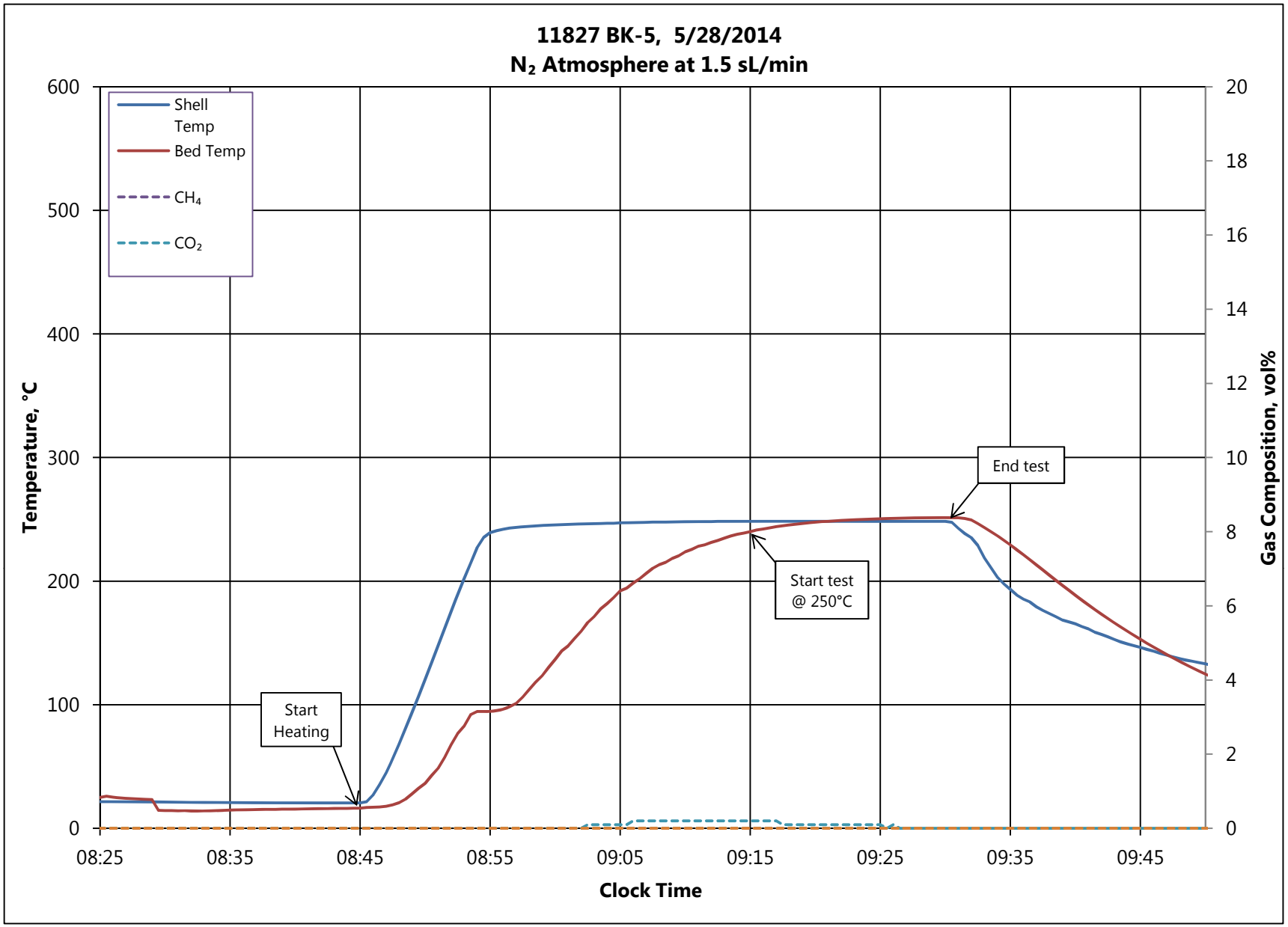
Condensate, g: 37.00

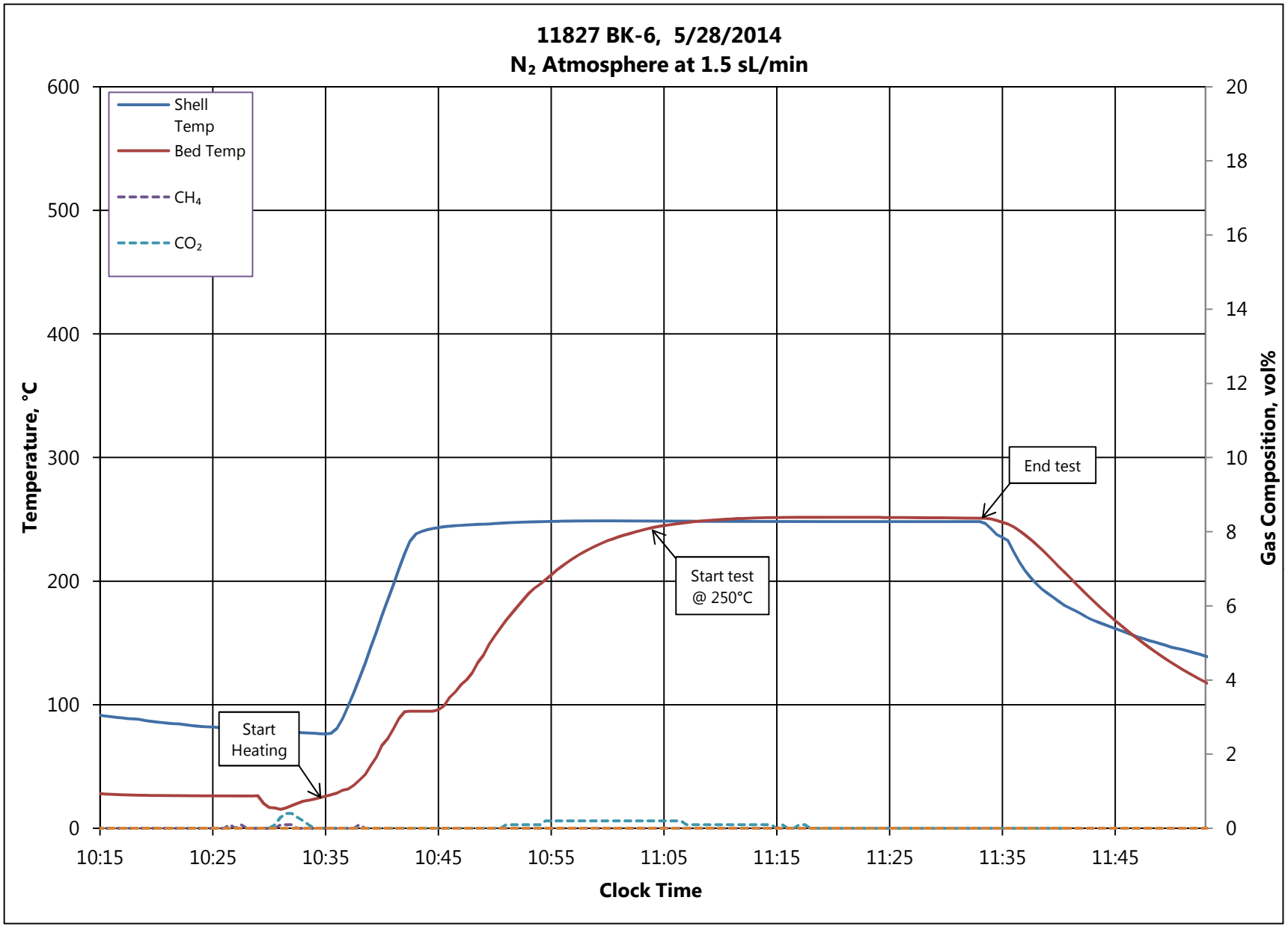

11827 BK-1, 5/23/2014
N2 Atmosphere at 1.5 sL/min
Shell Temp
Bed Temp
CH4
CO2
Start Heating
Start test @ 250°C
End test
Temperature, °C
Gas Composition, vol%
Clock Time
600
500
400
300
200
100
0
20
18
16
14
12
10
8
6
4
2
0
08:00
08:10
08:20
08:30
08:40
08:50
09:00
09:10
09:20

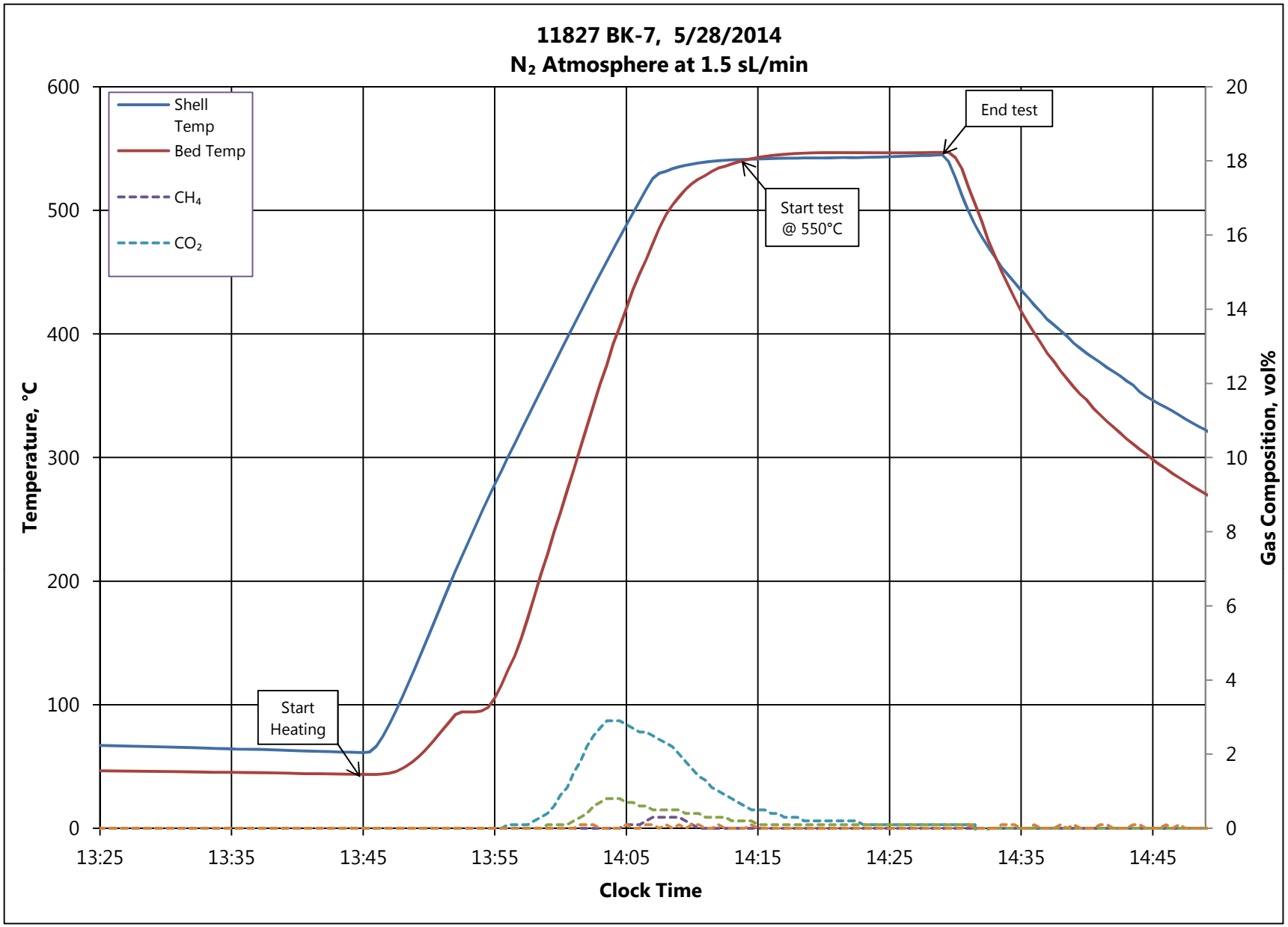

11827 BK-2, 5/23/2014
N2 Atmosphere at 1.5 sL/min
Shell Temp
Bed Temp
CH4
CO2
Start Heating
Start test @ 250°C
End test
Temperature, °C
Gas Composition, vol%
Clock Time
600
500
400
300
200
100
0
20
18
16
14
12
10
8
6
4
2
0
10:00
10:10
10:20
10:30
10:40
10:50
11:00
11:10
11:20
11:30

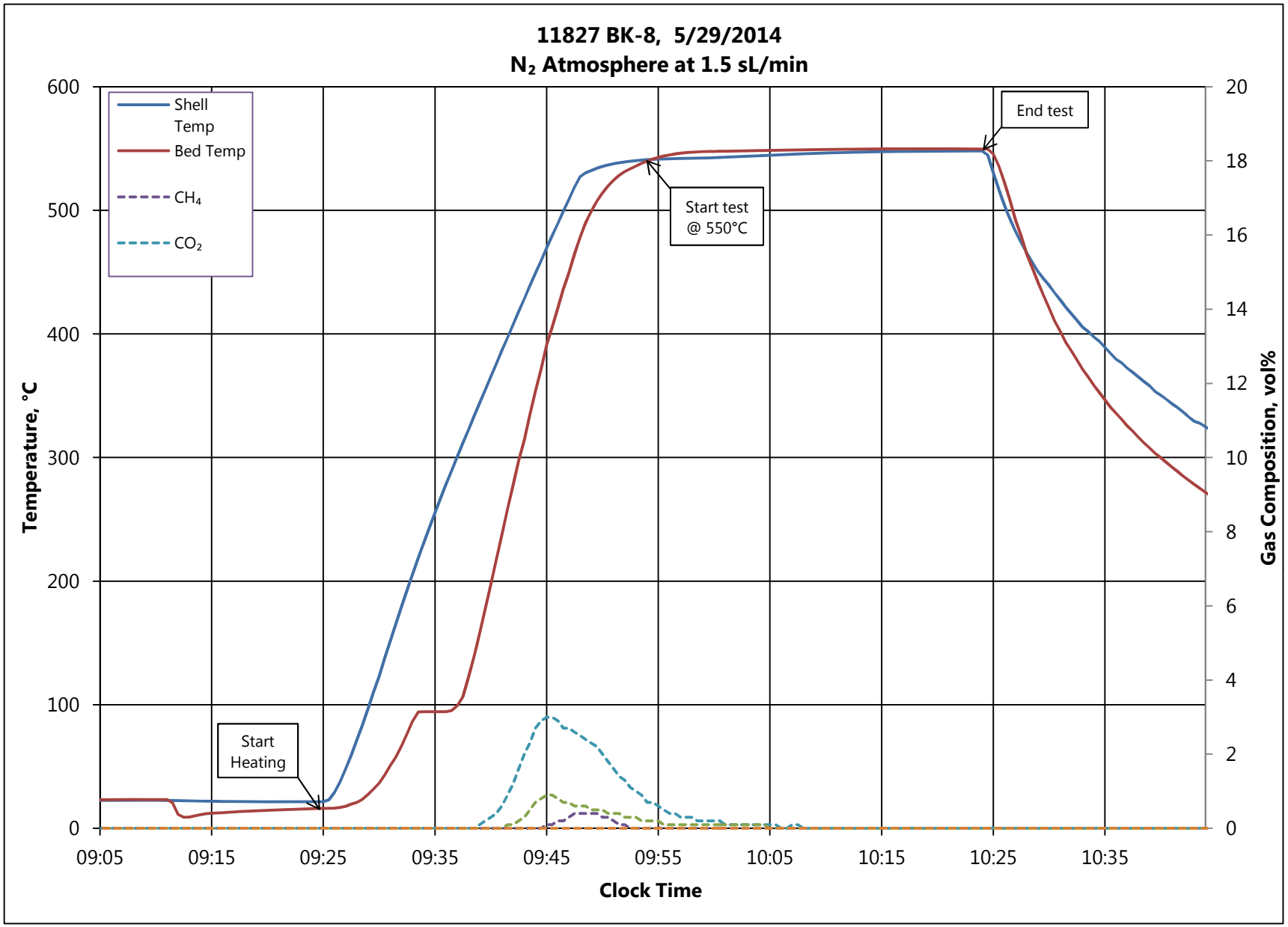

11827 BK-3, 5/23/2014
N2 Atmosphere at 1.5 sL/min
Shell Temp
Bed Temp
CH4
CO2
Start Heating
Start test @ 550°C
End test
Temperature, °C
Gas Composition, vol%
Clock Time
600
500
400
300
200
100
0
20
18
16
14
12
10
8
6
4
2
0
12:20
12:30
12:40
12:50
13:00
13:10
13:20
13:30


11827 BK-4, 5/27/2014
N2 Atmosphere at 1.5 sL/min
Shell Temp
Bed Temp
CH4
CO2
Start Heating
Start test @ 550°C
End test
Temperature, °C
Gas Composition, vol%
Clock Time
600
500
400
300
200
100
0
20
18
16
14
12
10
8
6
4
2
0
11:30
11:40
11:50
12:00
12:10
12:20
12:30
12:40
12:50
13:00
13:10


11827 BK-5, 5/28/2014
N2 Atmosphere at 1.5 sL/min
Shell Temp
Bed Temp
CH4
CO2
Start Heating
Start test @ 250°C
End test
Temperature, °C
Gas Composition, vol%
Clock Time
600
500
400
300
200
100
0
20
18
16
14
12
10
8
6
4
2
0
08:25
08:35
08:45
08:55
09:05
09:15
09:25
09:35
09:45


11827 BK-6, 5/28/2014
N2 Atmosphere at 1.5 sL/min
Shell Temp
Bed Temp
CH4
CO2
Start Heating
Start test @ 250°C
End test
Temperature, °C
Gas Composition, vol%
Clock Time
600
500
400
300
200
100
0
20
18
16
14
12
10
8
6
4
2
0
10:15
10:25
10:35
10:45
10:55
11:05
11:15
11:25
11:35
11:45


11827 BK-7, 5/28/2014
N2 Atmosphere at 1.5 sL/min
Shell Temp
Bed Temp
CH4
CO2
Start Heating
Start test @ 550°C
End test
Temperature, °C
Gas Composition, vol%
Clock Time
600
500
400
300
200
100
0
20
18
16
14
12
10
8
6
4
2
0
13:25
13:35
13:45
13:55
14:05
14:15
14:25
14:35
14:45


11827 BK-8, 5/29/2014
N2 Atmosphere at 1.5 sL/min
Shell Temp
Bed Temp
CH4
CO2
Start Heating
Start test @ 550°C
End test
Temperature, °C
Gas Composition, vol%
Clock Time
600
500
400
300
200
100
0
20
18
16
14
12
10
8
6
4
2
0
09:05
09:15
09:25
09:35
09:45
09:55
10:05
10:15
10:25
10:35

# APPENDIX D

## Log Book

Project No. 11827
Book No. 3799 TITLE

From Page No.

5-14-18 - Safety minute: be aware of organics in material - PPE as needed; log + weigh all samples; dust - minimal but watch

- Transfer material in bags into 6gal buckets

53934-2 - 24.3 Kg 53934-B - 23.9 Kg.

53934-02 splits ~ 500g each

02 As received tests

Bulk density

Loose 487.8g / 460cc = 1.060 g/cc

packed 487.8g / 360cc = 1.355 g/cc

Angle of repose - 40°

PSD

| | |
|---|---|
| 8 | 77.2 |
| 10 | 22.7 |
| 18 | 91.7 |
| 20 | 22.5 |
| 30 | 51.6 |
| 40 | 53.9 |
| 50 | 49.2 |
| 70 | 57.5 |
| 100 | 45.1 |
| 140 | 20.7 |
| 200 | 5.7 |
| pan | 1.4 |

moisture
wet 502.0g
dry 472.2g
- 29.8g / 5.9%

02 dried feed -

Bulk density

loose 174.1 / 144cc = 1.209 g/cc

Packed 174.1 / 119cc = 1.463 g/cc

angle of repose 34°

PSD - Started 472.2

| | |
|---|---|
| 8 | 47.4 |
| 10 | 11.3 |
| 18 | 56.5 |
| 20 | 18.0 |
| 30 | 46.0 |
| 40 | 47.6 |
| 50 | 49.4 |
| 70 | 42.2 |
| 100 | 39.8 |
| 140 | 33.3 |
| 200 | 32.1 |
| pan | 51.2 |

To Page No.

| Recorded by: | Date | Verified by: | Date |
|---|---|---|---|

From Page No. ____

5-19-14

5-16 06 feed as received tests

PSDs

| | wet | dry |
|---|---|---|
| % | 108.5 | 53.5 |
| 10 | 17.8 | 12.7 |
| 18 | 71.4 | 62.3 |
| 20 | 22.8 | 18.2 |
| 30 | 64.4 | 57.9 |
| 40 | 80.5 | 52.7 |
| 50 | 77.4 | 50.6 |
| 70 | 46.4 | 41.0 |
| 100 | 8.6 | 39.8 |
| 140 | 1.3 | 33.7 |
| 200 | .4 | 28.2 |
| pan | .3 | 32.4 |

Moisture

Wet wt 507.4

Dry 476.6g -30.8g

-6.1%

Bulk Density

Dry loose 266.9g / 190cc 1.405 g/cc

Packed 266.9g / 172cc 1.552 g/cc

wet loose 244.6g / 224cc 1.092 g/cc

Packed 244.6g / 170cc 1.439 g/cc

Angle of Repose Dry 34°

wet 41°

To Page No. ____

Recorded by: | Date | Verified by: | Date

Project No. _____

Book No. _____ TITLE _____

From Page No. ____

5-14-14
53934-
0002

Splits taken from As received Samples
24.3 Kg total wt. received

(1) 502.0g

(2) 504.3g

(3) 504.4g

(4) 503.1g

(5) 502.5g

(6) 503.3g

(7) 503.7g

(8) 504.4g

(9) 505.3g

(10) 504.1g

(11) 503.8g

(12) 503.7g

- 502.0g for As received tests -dried 5-18-14
- 51.8g for TGA - 5-15-14
- 55.8g 5-14-14 + 1" feed from splits

To Page No. ____

| Recorded by: | Date | Verified by: | Date |
|---|---|---|---|

From Page No. ____

5-15-14
53934-
0006

23.9 Kg total wt received

① 502.9 g
② 504.0 g
③ 503.5 g
④ 503.0 g
⑤ 508.0 g
⑥ 507.5 g
⑦ 507.1 g
⑧ 506.0 g
⑨ 507.6 g
⑩ 508.7 g
⑪ 507.0 g
⑫ 507.8 g - for dried tests 5-16-14
52.3 g for TGA 5-15-14
40.0 g 5-15-14 +1" feed from splits



Recorded by: | Date | Verified by: | Date

From Page No. ____

05-21-14 cp @ 0920
Thermal couple check to NIST traceable thermal couple
Kiln Bed = 20.8°C NIST = 20.8°C
Kiln Shell = 20.7°C NIST = 20.8°C

05-21-14 cp @ 0935
MetHer PM34 Calibrated 5-19-14

05-21-14 cp @ 1040
Analyzer calibration
Zero

| | Analyzer | HMI |
|---|---|---|
| $CH_4$ % | 0.0 | 0.0 |
| $CO_2$ % | 0.0 | 0.0 |
| CO % | 0.0 | 0.0 |
| $H_2$ % | 0.0 | 0.0 |

Span

| | Analyzer | HMI |
|---|---|---|
| $CH_4$ % | 20.1 | 20.1 |
| $CO_2$ % | 25.0 | 25.0 |
| CO % | 24.8 | 24.8 |
| $H_2$ % | 10.0 | 10.0 |

Span Gas Concentration

| | |
|---|---|
| $CH_4$ % | 20.1 |
| $CO_2$ % | 25.0 |
| CO % | 24.9 |
| $H_2$ % | 10.0 |

To Page No. ____

| Recorded by: | Date | Verified by: | Date |
|---|---|---|---|

From Page No. ____

05-23-14 @ 0730
Zeroing & spanning analyzer
Zero

| | Analyzer | HMI |
|---|---|---|
| $CH_4$% | 0.0 | 0.0 |
| $CO_2$% | 0.0 | 0.0 |
| CO% | 0.0 | 0.0 |
| $H_2$% | 0.0 | 0.0 |

Span

| | | |
|---|---|---|
| $CH_4$% | 20.1 | 20.1 |
| $CO_2$% | 25.0 | 25.0 |
| CO% | 24.8 | 24.8 |
| $H_2$% | 10.0 | 10.0 |

FB-1
Feed 53934-002 #1

Kiln
Initial gross, g 2227.4
Tare, g 1726.4
Net wt, g 501.0

5-23-14 @ 0805
Bubbler
100% $H_2O$ DI
Gross wt 7851.1 g

5-23-14 @ 0815
Test BK-1
Target temp 250°C
Sweep gas $N_2$ @ 1.5 lpm
15 min retention

5-23-14 @ 0820
Start heating $N_2$ on @ 1.5 lpm

To Page No. ____

Recorded by: | Date | Verified by: | Date

From Page No. ____

05-23-14 cp @ 0825
Checked RPM. RPM @ 1

05-23-14 cp @ 0847
At 240°c start 15 min hold

05-23-14 cp @ 0850
Material seems to be flowing well in kiln

05-23-14 @ 0902
End test cool with $N_2$

05-23-14 @ 0915
Final weights
Condensate - 19.45
Bubbler - 123.46
Sample - 465.25

BK-2

05-23-14 CP @ 1005
BK-2
Gross wt - 2229.4 g
Tare wt - 1726.7 g
Net wt - 502.7 g
Scrubber wt - 797.6 g

Conditions
Feed - 53934-0002 #2
Temp - 250°c
Retention time - 30 min
Sweep Gas - $N_2$ 1.5 slpm

To Page No. ____

| Recorded by: | Date | Verified by: | Date |
|---|---|---|---|

From Page No. ____

BK-2

05-23-14 CP @ 1015
Start heating

05-23-14 CP @ 1041
Begin 30 min hold

05-23-14 CP @ 1111
End test - Heat off - Cool under $N_2$

05-23-14 CP @ 1200
End wt Condensate - 29.32g
Scrubber - 796.9g
Kiln gross wt - 2199.1g
Net wt - 472.4g
Tare wt - 1726.7g

BK-3

05-23-14 CP @ 1230
Gross wt - 2230.8g
Tare wt - 1727.6g
Net wt - 503.2g
Scrubber wt - 774.3g

Conditions
Feed - 53934-0002 #3
Temp - 550°C
Retention time - 15 min
Sweep gas - $N_2$

05-23-14 CP @ 1235
Start heating

05-23-14 CP @
Begin 15 min hold 1303

To Page No. ____

Recorded by: | Date | Verified by: | Date

From Page No. ____

05-23-14 CP @ 1318
End test cool under $N_2$

05-23-14 CP @ 1400
End weight
Condensate – 34.60
Scrubber – 773.6
Kiln gross – 2190.9
Tare – 1727.4
Net – 463.2

05-27-14 CP @ 0730
Zero & Span analyzer
Zero

| Analyzer | HM1 |
|---|---|
| $CH_4$% 0.0 | 0.0 |
| $CO_2$% 0.0 | 0.0 |
| CO% 0.0 | 0.0 |
| $H_2$% 0.0 | 0.0 |

Span

| Analyzer | HM1 |
|---|---|
| $CH_4$% 20.1 | 20.1 |
| $CO_2$% 25.0 | 25.0 |
| CO% 24.8 | 24.8 |
| $H_2$% 10.0 | 10.0 |

Span gas Concentration

$CH_4$% 20.1
$CO_2$% 25.0
CO% 24.9
$H_2$% 10.0

To Page No. ____

| Recorded by: | Date | Verified by: | Date |
|---|---|---|---|

From Page No. ____

BK-4

05-27-14 CP @ 1130
BK-4
Gross wt - 2228.6
Tare wt - 1726.3
Net wt - 502.3
Scrubber wt - 779.2

Conditions
Feed - 53934-0002 #4
Temp 550°C
Retention time 30 min
Sweep gas $N_2$

05-27-14 CP @ 1150
Start heating

05-27-14 CP @ 1220
Begin 30 min hold

05-27-14 CP @ 1208
Pulling Tedlar Bag Sample
Start - 12.10
End - 1215

05-27-14 CP @ 1320
Fuel weights
Condensate - 34.65g
Scrubber - 777.8
Kiln Gross - 2190.0
Tare - 1726.3
Net - 463.7

05-28-14 CP @ 0750
Zero & Span Analyzer
Zero

| Analyzer | HMI |
|---|---|
| $CH_4$% 0.0 | 0.0 |
| $CO_2$% 0.0 | 0.0 |
| CO% 0.0 | 0.0 |
| $H_2$% 0.0 | 0.0 |

To Page No. ____

| Recorded by: | Date | Verified by: | Date |
|---|---|---|---|

From Page No. ____

5-28-14 CP @ 0756
Span

| | Analyzer | HMI |
|---|---|---|
| $CH_4$ % | 20.1 | 20.1 |
| $CO_2$ % | 25.0 | 25.0 |
| CO % | 24.8 | 24.8 |
| $H_2$ % | 10.0 | 10.0 |

Span gas concentration

| | |
|---|---|
| $CH_4$ % | 20.1 |
| $CO_2$ % | 25.0 |
| CO % | 24.9 |
| $H_2$ % | 10.0 |

BK-5

5-28-14 CP @ 0810
BK-5 conditions
Feed 53934-006 #1
Temp - 250°c
Retention time - 15 min.
Sweep gas - $N_2$

5-28-14 CP @ 0830
BK-5
Gross wt. - 2228.9
Tare wt. - 1726.4
Net wt. - 502.5
Scrubber wt. - 775.9

5-28-14 CP @ 0845
Start heating to 250°c

5-28-14 CP @ 0915
Start 15 min Retention

To Page No. ____

Recorded by: | Date | Verified by: | Date

From Page No. ____

BK-5

5-28-14 cp @ 0930
End test, cool with $N_2$

5-28-14 cp @ 1000
End weights
Condensate - 29.13g
Scrubber - 775.4g
Kiln gross - 2194.0g
Tare - 1726.4g
Net - 467.6g

BK-6

5-28-14 cp @ 1030
BK-6 conditions
Feed - 53934-0004 #2
Temp - 250°C
Retention time - 30 min
Sweep gas - $N_2$

5-28-14 cp @ 1035
BK-6
Gross wt - 2229.9g
Tare wt - 1726.3g
Net wt - 503.6g
Scrubber wt - 773.6g

5-28-14 cp @ 1035
Start heating to 250°C

5-28-14 cp @ 1103
Start 30 min. Retention

To Page No. ____

| Recorded by: | Date | Verified by: | Date |
|---|---|---|---|

From Page No. ____

BK-6

5-28-14 CP @ 1133
End test Cool with $N_2$

5-28-14 CP @ 1200
End weights
Condensate - 33.98g
Scrubber - 772.7g
Kiln gross - 2194.7g
Tare - 1726.3g
Net - 468.4g

BK-7

5-28-14 CP @ 1240
BK-7 condition
Feed - 53934-0006 #3
Temp - 550°C
Retention Time - 15 min.
Sweep gas - $N_2$

5-28-14 CP @ 1245
BK-7
Gross wt. - 2229.6
Tare wt. - 1726.4
Net wt. - 503.2
Scrubber wt. - 777.9

5-28-14 CP @ 1345
Start heating to 550°C

5-28-14 CP @ 1414
Start 15 min Retention

5-28-14 CP @ 1429
End test, Cool with $N_2$

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| Recorded by: | Date | Verified by: | Date |
|---|---|---|---|

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05-28-14 CP @ 1458
End weights
Condensate - 35.24g
Scrubber - 776.8g
Kiln gross - 2189.2
Tare - 1726.4
Net - 462.8

05-29-14 CP @ 0850
Zero & Span analyzer
Zero

| Analyzer | | HMI |
|---|---|---|
| $CH_4$% | 0.0 | 0.0 |
| $CO_2$% | 0.0 | 0.0 |
| CO% | 0.0 | 0.0 |
| $H_2$% | 0.0 | 0.0 |

Span

| Analyzer | | HMI |
|---|---|---|
| $CH_4$% | 20.1 | 20.1 |
| $CO_2$% | 25.0 | 25.0 |
| CO% | 24.8 | 24.8 |
| $H_2$% | 10.0 | 10.0 |

Span gas

| | |
|---|---|
| $CH_4$% | 20.1 |
| $CO_2$% | 25.0 |
| CO% | 24.9 |
| $H_2$% | 10.0 |

To Page No. ____

Recorded by: | Date | Verified by: | Date

From Page No. ____

BK-8

5-29-14 CP @ 0918
BK-8 Conditions
Feed - 53934-0006 #4
Temp - 550°C
Retention time - 30 min
Sweep Gas - $N_2$

05-29-14 CP @ 0920
Gross wt - 2229.0g
Tare wt - 1726.4g
Wet wt - 502.6g
Scrubber wt - 776.6g

05-29-14 CP @ 0925
Start heating to 550°C

5-29-14 CP @ 0947
Start tedlar bag Sample

5-29-14 CP @ 0952
End tedlar bag Sample

5-29-14 CP @ 0954
begin 30 min. Retention

5-29-14 CP @ 0924
End test cool with $N_2$

05-29-14 CP @ 1105
End weights
Condensate - 37.00g
Scrubber - 775.3g
Kiln gross - 2188.1g
Tare - 1726.4g
Net - 461.7g

To Page No. ____

| Recorded by: | Date | Verified by: | Date |
|---|---|---|---|

From Page No. ____

06-02-14 LP @ 1020

| Bk condensate | PH using Paper |
|---|---|
| BK-1 | 3 |
| BK-2 | 3 |
| BK-3 | 9 |
| BK-4 | 9 |
| BK-5 | 5.5 |
| BK-6 | 5 |
| BK-7 | 9 |
| BK-8 | 9 |

To Page No. ____

| Recorded by: | Date | Verified by: | Date |
|---|---|---|---|

# APPENDIX E

## Samples Received

Table 3.2-1

**Thermal Desorption Sampling and Monitoring Plan – ABFF**

*Work Plan/Sampling and Analysis Plan for Bench-scale Soil Treatability Studies: Santa Susana Field Laboratory, Ventura County, California*

| | | pH | TPHs (Method 8015B) | Antimony (Method 6010B) | Thermal Gravimetric Analysis | Bulk Denisty | Particle Size Distribution | Angle of Repose |
|---|---|---|---|---|---|---|---|---|
| | **Sample ID** | **Sample 1 collected from 0–5 ft bgs** | | | | | | |
| **Untreated Sample** | **ABBS1018S101** | x | x | x | x | x | x | x |
| | | | | | | | | |
| **Sample 1, Batch 1, Post Thermal Desorption** | | | | | | | | |
| Low Retention Time | ABBS1018S102 | | x | x | | | | |
| Condensate | ABLS1018S101 | x | | | | | | |
| High Retention Time | ABBS1018S103 (ABBS1018D103) | | x | x | | | | |
| Condensate | ABLS1018S102 | x | | | | | | |
| | | | | | | | | |
| **Sample 1, Batch 2, Post Thermal Desorption** | | | | | | | | |
| Low Retention Time | ABBS1018S104 | | x | x | | | | |
| Condensate | ABLS1018S103 | x | | | | | | |
| High Retention Time | ABBS1018S105 | | x | x | | | | |
| Condensate | ABLS1018S104 | x | | | | | | |
| | | **Sample 2 collected from 5–10 ft bgs** | | | | | | |
| **Untreated Sample** | **ABBS1018S201** | x | x | x | x | x | x | x |
| | | | | | | | | |
| **Sample 2, Batch 1, Post Thermal Desorption** | | | | | | | | |
| Low Retention Time | ABBS1018S202 | | x | x | | | | |
| Condensate | ABLS1018S201 | x | | | | | | |
| High Retention Time | ABBS1018S203 (ABBS1018S203MS, ABBS1018S203SD) | | x | x | | | | |
| Condensate | ABLS1018S202 | x | | | | | | |
| | | | | | | | | |
| **Sample 2, Batch 2, Post Thermal Desorption** | | | | | | | | |
| Low Retention Time | ABBS1018S204 | | x | x | | | | |
| Condensate | ABLS1018S203 | x | | | | | | |
| High Retention Time | ABBS1018S205 (ABBS1018S205S) | | x | x | | | | |
| Condensate | ABLS1018S204 | x | | | | | | |
| | | | | | | | | |
| Composite Condensate | ABLS1018S203 | | x | x | | | | |
| Noncondensable Gas | ABPV1018S203 | | x | x | | | | |
| | | | | | | | | |

ABFF = Alfa/Bravo Fuel Farm
TPH = total petroleum hydrocarbons
ft bgs = feet below ground surface

# APPENDIX F

## Preliminary Analytical Results

| FieldID | NativeID | Descriptions | QAQCType | LRType | Matrix | AnalysisMethod | SampleDate | ParamID | Analyte | Result | ConcQual | Units | Dilution | MDL | RL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ABBS1018S101 | ABBS1018S101 | 0 to 5 untreated | N | | SOIL | M8015 | 5/14/2014 | TPHC12C14 | C12-C14 | 1.7 | U | MG/KG | 1 | 1.7 | 5.4 |
| ABBS1018S102 | ABBS1018S102 | 0 to 5 batch 1 low retention time | N | | SOIL | M8015 | 5/23/2014 | TPHC12C14 | C12-C14 | 1.6 | U | MG/KG | 1 | 1.6 | 5 |
| ABBS1018S103 | ABBS1018S103 | 0 to 5 batch 1 high retention time | N | | SOIL | M8015 | 5/23/2014 | TPHC12C14 | C12-C14 | 1.6 | U | MG/KG | 1 | 1.6 | 5 |
| ABBS1018D103 | ABBS1018D103 | 0 to 5 batch 1 high retention time--duplicate | N | | SOIL | M8015 | 5/23/2014 | TPHC12C14 | C12-C14 | 1.6 | U | MG/KG | 1 | 1.6 | 5 |
| ABBS1018S104 | ABBS1018S104 | 0 to 5 batch 2 low retention time | N | | SOIL | M8015 | 5/23/2014 | TPHC12C14 | C12-C14 | 1.6 | U | MG/KG | 1 | 1.6 | 5 |
| ABBS1018S105 | ABBS1018S105 | 0 to 5 batch 2 high retention time | N | | SOIL | M8015 | 5/27/2014 | TPHC12C14 | C12-C14 | 1.6 | U | MG/KG | 1 | 1.6 | 5 |
| ABBS1018S101 | ABBS1018S101 | 0 to 5 untreated | N | | SOIL | M8015 | 5/14/2014 | TPHC15C20 | C15-C20 | 1.7 | U | MG/KG | 1 | 1.7 | 5.4 |
| ABBS1018S102 | ABBS1018S102 | 0 to 5 batch 1 low retention time | N | | SOIL | M8015 | 5/23/2014 | TPHC15C20 | C15-C20 | 1.6 | U | MG/KG | 1 | 1.6 | 5 |
| ABBS1018S103 | ABBS1018S103 | 0 to 5 batch 1 high retention time | N | | SOIL | M8015 | 5/23/2014 | TPHC15C20 | C15-C20 | 3.3 | J | MG/KG | 1 | 1.6 | 5 |
| ABBS1018D103 | ABBS1018D103 | 0 to 5 batch 1 high retention time--duplicate | N | | SOIL | M8015 | 5/23/2014 | TPHC15C20 | C15-C20 | 2.7 | J | MG/KG | 1 | 1.6 | 5 |
| ABBS1018S104 | ABBS1018S104 | 0 to 5 batch 2 low retention time | N | | SOIL | M8015 | 5/23/2014 | TPHC15C20 | C15-C20 | 1.6 | U | MG/KG | 1 | 1.6 | 5 |
| ABBS1018S105 | ABBS1018S105 | 0 to 5 batch 2 high retention time | N | | SOIL | M8015 | 5/27/2014 | TPHC15C20 | C15-C20 | 1.6 | U | MG/KG | 1 | 1.6 | 5 |
| ABBS1018S101 | ABBS1018S101 | 0 to 5 untreated | N | | SOIL | M8015 | 5/14/2014 | TPHC21C30 | C21-C30 | 36 | = | MG/KG | 1 | 1.7 | 5.4 |
| ABBS1018S102 | ABBS1018S102 | 0 to 5 batch 1 low retention time | N | | SOIL | M8015 | 5/23/2014 | TPHC21C30 | C21-C30 | 8.2 | = | MG/KG | 1 | 1.6 | 5 |
| ABBS1018S103 | ABBS1018S103 | 0 to 5 batch 1 high retention time | N | | SOIL | M8015 | 5/23/2014 | TPHC21C30 | C21-C30 | 10 | = | MG/KG | 1 | 1.6 | 5 |
| ABBS1018D103 | ABBS1018D103 | 0 to 5 batch 1 high retention time--duplicate | N | | SOIL | M8015 | 5/23/2014 | TPHC21C30 | C21-C30 | 8.1 | = | MG/KG | 1 | 1.6 | 5 |
| ABBS1018S104 | ABBS1018S104 | 0 to 5 batch 2 low retention time | N | | SOIL | M8015 | 5/23/2014 | TPHC21C30 | C21-C30 | 1.6 | U | MG/KG | 1 | 1.6 | 5 |
| ABBS1018S105 | ABBS1018S105 | 0 to 5 batch 2 high retention time | N | | SOIL | M8015 | 5/27/2014 | TPHC21C30 | C21-C30 | 1.6 | U | MG/KG | 1 | 1.6 | 5 |
| ABBS1018S101 | ABBS1018S101 | 0 to 5 untreated | N | | SOIL | M8015 | 5/14/2014 | OROC30C40 | C30-C40 (TPH as Oil) | 48 | = | MG/KG | 1 | 1.7 | 5.4 |
| ABBS1018S102 | ABBS1018S102 | 0 to 5 batch 1 low retention time | N | | SOIL | M8015 | 5/23/2014 | OROC30C40 | C30-C40 (TPH as Oil) | 19 | = | MG/KG | 1 | 1.6 | 5 |
| ABBS1018S103 | ABBS1018S103 | 0 to 5 batch 1 high retention time | N | | SOIL | M8015 | 5/23/2014 | OROC30C40 | C30-C40 (TPH as Oil) | 11 | = | MG/KG | 1 | 1.6 | 5 |
| ABBS1018D103 | ABBS1018D103 | 0 to 5 batch 1 high retention time--duplicate | N | | SOIL | M8015 | 5/23/2014 | OROC30C40 | C30-C40 (TPH as Oil) | 8.8 | = | MG/KG | 1 | 1.6 | 5 |
| ABBS1018S104 | ABBS1018S104 | 0 to 5 batch 2 low retention time | N | | SOIL | M8015 | 5/23/2014 | OROC30C40 | C30-C40 (TPH as Oil) | 1.6 | U | MG/KG | 1 | 1.6 | 5 |
| ABBS1018S105 | ABBS1018S105 | 0 to 5 batch 2 high retention time | N | | SOIL | M8015 | 5/27/2014 | OROC30C40 | C30-C40 (TPH as Oil) | 1.6 | U | MG/KG | 1 | 1.6 | 5 |
| ABBS1018S101 | ABBS1018S101 | 0 to 5 untreated | N | | SOIL | M8015 | 5/14/2014 | TPHC8C11 | C8-C11 | 1.7 | U | MG/KG | 1 | 1.7 | 5.4 |
| ABBS1018S102 | ABBS1018S102 | 0 to 5 batch 1 low retention time | N | | SOIL | M8015 | 5/23/2014 | TPHC8C11 | C8-C11 | 1.6 | U | MG/KG | 1 | 1.6 | 5 |
| ABBS1018S103 | ABBS1018S103 | 0 to 5 batch 1 high retention time | N | | SOIL | M8015 | 5/23/2014 | TPHC8C11 | C8-C11 | 3.3 | J | MG/KG | 1 | 1.6 | 5 |
| ABBS1018D103 | ABBS1018D103 | 0 to 5 batch 1 high retention time--duplicate | N | | SOIL | M8015 | 5/23/2014 | TPHC8C11 | C8-C11 | 3.5 | J | MG/KG | 1 | 1.6 | 5 |
| ABBS1018S104 | ABBS1018S104 | 0 to 5 batch 2 low retention time | N | | SOIL | M8015 | 5/23/2014 | TPHC8C11 | C8-C11 | 1.6 | U | MG/KG | 1 | 1.6 | 5 |
| ABBS1018S105 | ABBS1018S105 | 0 to 5 batch 2 high retention time | N | | SOIL | M8015 | 5/27/2014 | TPHC8C11 | C8-C11 | 1.6 | U | MG/KG | 1 | 1.6 | 5 |
| ABBS1018S101 | ABBS1018S101 | 0 to 5 untreated | N | | SOIL | A2540B | 5/14/2014 | TSO | Solids, Total | 93 | = | % | 1 | 0.1 | 0.1 |
| ABBS1018S102 | ABBS1018S102 | 0 to 5 batch 1 low retention time | N | | SOIL | A2540B | 5/23/2014 | TSO | Solids, Total | 100 | = | % | 1 | 0.1 | 0.1 |
| ABBS1018S103 | ABBS1018S103 | 0 to 5 batch 1 high retention time | N | | SOIL | A2540B | 5/23/2014 | TSO | Solids, Total | 99.2 | = | % | 1 | 0.1 | 0.1 |
| ABBS1018D103 | ABBS1018D103 | 0 to 5 batch 1 high retention time--duplicate | N | | SOIL | A2540B | 5/23/2014 | TSO | Solids, Total | 99.7 | = | % | 1 | 0.1 | 0.1 |
| ABBS1018S104 | ABBS1018S104 | 0 to 5 batch 2 low retention time | N | | SOIL | A2540B | 5/23/2014 | TSO | Solids, Total | 99.7 | = | % | 1 | 0.1 | 0.1 |
| ABBS1018S105 | ABBS1018S105 | 0 to 5 batch 2 high retention time | N | | SOIL | A2540B | 5/27/2014 | TSO | Solids, Total | 99.7 | = | % | 1 | 0.1 | 0.1 |
| ABBS1018S101 | ABBS1018S101 | 0 to 5 untreated | N | | SOIL | M8015 | 5/14/2014 | PHCG | TPH as Gasoline | 0.14 | U | MG/KG | 1 | 0.14 | 0.54 |
| ABBS1018S102 | ABBS1018S102 | 0 to 5 batch 1 low retention time | N | | SOIL | M8015 | 5/23/2014 | PHCG | TPH as Gasoline | 1.2 | = | MG/KG | 1 | 0.13 | 0.51 |
| ABBS1018S103 | ABBS1018S103 | 0 to 5 batch 1 high retention time | N | | SOIL | M8015 | 5/23/2014 | PHCG | TPH as Gasoline | 1.4 | = | MG/KG | 1 | 0.12 | 0.49 |
| ABBS1018D103 | ABBS1018D103 | 0 to 5 batch 1 high retention time--duplicate | N | | SOIL | M8015 | 5/23/2014 | PHCG | TPH as Gasoline | 1.7 | = | MG/KG | 1 | 0.13 | 0.51 |
| ABBS1018S104 | ABBS1018S104 | 0 to 5 batch 2 low retention time | N | | SOIL | M8015 | 5/23/2014 | PHCG | TPH as Gasoline | 0.12 | U | MG/KG | 1 | 0.12 | 0.48 |
| ABBS1018S105 | ABBS1018S105 | 0 to 5 batch 2 high retention time | N | | SOIL | M8015 | 5/27/2014 | PHCG | TPH as Gasoline | 0.13 | U | MG/KG | 1 | 0.13 | 0.5 |

| FieldID | NativeID | Descriptions | QAQCType | LRType | Matrix | AnalysisMethod | SampleDate | ParamID | Analyte | Result | ConcQual | Units | Dilution | MDL | RL | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ABBS1018S201 | ABBS1018S201 | 5 to 10 untreated | N | | SOIL | M8015 | 5/15/2014 | TPHC12C14 | C12-C14 | 1.7 | U | MG/KG | 1 | 1.7 | 5.3 | |
| ABBS1018S202 | ABBS1018S202 | 5 to 10 batch 1 low retention time | N | | SOIL | M8015 | 5/28/2014 | TPHC12C14 | C12-C14 | 1.6 | U | MG/KG | 1 | 1.6 | 5 | |
| ABBS1018S203 | ABBS1018S203 | 5 to 10 batch 1 high retention time | N | | SOIL | M8015 | 5/28/2014 | TPHC12C14 | C12-C14 | 1.6 | U | MG/KG | 1 | 1.6 | 5 | |
| ABBS1018S204 | ABBS1018S204 | 5 to 10 batch 2 low retention time | N | | SOIL | M8015 | 5/28/2014 | TPHC12C14 | C12-C14 | 1.6 | U | MG/KG | 1 | 1.6 | 5 | |
| ABBS1018S205 | ABBS1018S205 | 5 to 10 batch 2 high retention time | N | | SOIL | M8015 | 5/29/2014 | TPHC12C14 | C12-C14 | 1.6 | U | MG/KG | 1 | 1.6 | 5 | |
| ABBS1018S201 | ABBS1018S201 | 5 to 10 untreated | N | | SOIL | M8015 | 5/15/2014 | TPHC15C20 | C15-C20 | 1.7 | U | MG/KG | 1 | 1.7 | 5.3 | |
| ABBS1018S202 | ABBS1018S202 | 5 to 10 batch 1 low retention time | N | | SOIL | M8015 | 5/28/2014 | TPHC15C20 | C15-C20 | 1.6 | U | MG/KG | 1 | 1.6 | 5 | |
| ABBS1018S203 | ABBS1018S203 | 5 to 10 batch 1 high retention time | N | | SOIL | M8015 | 5/28/2014 | TPHC15C20 | C15-C20 | 1.6 | U | MG/KG | 1 | 1.6 | 5 | |
| ABBS1018S204 | ABBS1018S204 | 5 to 10 batch 2 low retention time | N | | SOIL | M8015 | 5/28/2014 | TPHC15C20 | C15-C20 | 1.6 | U | MG/KG | 1 | 1.6 | 5 | |
| ABBS1018S205 | ABBS1018S205 | 5 to 10 batch 2 high retention time | N | | SOIL | M8015 | 5/29/2014 | TPHC15C20 | C15-C20 | 1.6 | U | MG/KG | 1 | 1.6 | 5 | |
| ABBS1018S201 | ABBS1018S201 | 5 to 10 untreated | N | | SOIL | M8015 | 5/15/2014 | TPHC21C30 | C21-C30 | 3.9 | = | MG/KG | 1 | 1.7 | 5.3 | |
| ABBS1018S202 | ABBS1018S202 | 5 to 10 batch 1 low retention time | N | | SOIL | M8015 | 5/28/2014 | TPHC21C30 | C21-C30 | 1.6 | U | MG/KG | 1 | 1.6 | 5 | |
| ABBS1018S203 | ABBS1018S203 | 5 to 10 batch 1 high retention time | N | | SOIL | M8015 | 5/28/2014 | TPHC21C30 | C21-C30 | 1.6 | U | MG/KG | 1 | 1.6 | 5 | |
| ABBS1018S204 | ABBS1018S204 | 5 to 10 batch 2 low retention time | N | | SOIL | M8015 | 5/28/2014 | TPHC21C30 | C21-C30 | 1.6 | U | MG/KG | 1 | 1.6 | 5 | |
| ABBS1018S205 | ABBS1018S205 | 5 to 10 batch 2 high retention time | N | | SOIL | M8015 | 5/29/2014 | TPHC21C30 | C21-C30 | 1.6 | U | MG/KG | 1 | 1.6 | 5 | |
| ABBS1018S201 | ABBS1018S201 | 5 to 10 untreated | N | | SOIL | M8015 | 5/15/2014 | OROC30C40 | C30-C40 (TPH as Oil) | 3.3 | = | MG/KG | 1 | 1.7 | 5.3 | |
| ABBS1018S202 | ABBS1018S202 | 5 to 10 batch 1 low retention time | N | | SOIL | M8015 | 5/28/2014 | OROC30C40 | C30-C40 (TPH as Oil) | 1.6 | U | MG/KG | 1 | 1.6 | 5 | |
| ABBS1018S203 | ABBS1018S203 | 5 to 10 batch 1 high retention time | N | | SOIL | M8015 | 5/28/2014 | OROC30C40 | C30-C40 (TPH as Oil) | 1.6 | U | MG/KG | 1 | 1.6 | 5 | |
| ABBS1018S204 | ABBS1018S204 | 5 to 10 batch 2 low retention time | N | | SOIL | M8015 | 5/28/2014 | OROC30C40 | C30-C40 (TPH as Oil) | 1.6 | U | MG/KG | 1 | 1.6 | 5 | |
| ABBS1018S205 | ABBS1018S205 | 5 to 10 batch 2 high retention time | N | | SOIL | M8015 | 5/29/2014 | OROC30C40 | C30-C40 (TPH as Oil) | 1.6 | U | MG/KG | 1 | 1.6 | 5 | |
| ABBS1018S201 | ABBS1018S201 | 5 to 10 untreated | N | | SOIL | M8015 | 5/15/2014 | TPHC8C11 | C8-C11 | 1.7 | U | MG/KG | 1 | 1.7 | 5.3 | |
| ABBS1018S202 | ABBS1018S202 | 5 to 10 batch 1 low retention time | N | | SOIL | M8015 | 5/28/2014 | TPHC8C11 | C8-C11 | 1.6 | U | MG/KG | 1 | 1.6 | 5 | |
| ABBS1018S203 | ABBS1018S203 | 5 to 10 batch 1 high retention time | N | | SOIL | M8015 | 5/28/2014 | TPHC8C11 | C8-C11 | 1.6 | U | MG/KG | 1 | 1.6 | 5 | |
| ABBS1018S204 | ABBS1018S204 | 5 to 10 batch 2 low retention time | N | | SOIL | M8015 | 5/28/2014 | TPHC8C11 | C8-C11 | 1.6 | U | MG/KG | 1 | 1.6 | 5 | |
| ABBS1018S205 | ABBS1018S205 | 5 to 10 batch 2 high retention time | N | | SOIL | M8015 | 5/29/2014 | TPHC8C11 | C8-C11 | 1.6 | U | MG/KG | 1 | 1.6 | 5 | |
| ABBS1018S201 | ABBS1018S201 | 5 to 10 untreated | N | | SOIL | A2540B | 5/15/2014 | TSO | Solids, Total | 93.9 | = | % | 1 | 0.1 | 0.1 | |
| ABBS1018S202 | ABBS1018S202 | 5 to 10 batch 1 low retention time | N | | SOIL | A2540B | 5/28/2014 | TSO | Solids, Total | 100 | = | % | 1 | 0.1 | 0.1 | |
| ABBS1018S203 | ABBS1018S203 | 5 to 10 batch 1 high retention time | N | | SOIL | A2540B | 5/28/2014 | TSO | Solids, Total | 99.9 | = | % | 1 | 0.1 | 0.1 | |
| ABBS1018S203 | ABBS1018S203 | 5 to 10 batch 1 high retention time | LR | D | SOIL | A2540B | 5/28/2014 | TSO | Solids, Total | 100 | = | % | 1 | 0.1 | 0.1 | |
| ABBS1018S204 | ABBS1018S204 | 5 to 10 batch 2 low retention time | N | | SOIL | A2540B | 5/28/2014 | TSO | Solids, Total | 99.7 | = | % | 1 | 0.1 | 0.1 | |
| ABBS1018S205 | ABBS1018S205 | 5 to 10 batch 2 high retention time | N | | SOIL | A2540B | 5/29/2014 | TSO | Solids, Total | 99.6 | = | % | 1 | 0.1 | 0.1 | |
| ABBS1018S201 | ABBS1018S201 | 5 to 10 untreated | N | | SOIL | M8015 | 5/15/2014 | PHCG | TPH as Gasoline | 0.13 | U | MG/KG | 1 | 0.13 | 0.52 | |
| ABBS1018S202 | ABBS1018S202 | 5 to 10 batch 1 low retention time | N | | SOIL | M8015 | 5/28/2014 | PHCG | TPH as Gasoline | 0.84 | = | MG/KG | 1 | 0.13 | 0.5 | |
| ABBS1018S203 | ABBS1018S203 | 5 to 10 batch 1 high retention time | N | | SOIL | M8015 | 5/28/2014 | PHCG | TPH as Gasoline | 0.73 | = | MG/KG | 1 | 0.12 | 0.5 | |
| ABBS1018S204 | ABBS1018S204 | 5 to 10 batch 2 low retention time | N | | SOIL | M8015 | 5/28/2014 | PHCG | TPH as Gasoline | 0.13 | U | MG/KG | 1 | 0.13 | 0.51 | |
| ABBS1018S205 | ABBS1018S205 | 5 to 10 batch 2 high retention time | N | | SOIL | M8015 | 5/29/2014 | PHCG | TPH as Gasoline | 0.12 | U | MG/KG | 1 | 0.12 | 0.5 | |

# Photographic Log of

# Thermal Desorption Bench Scale Test

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**Photo B-1.** Batch Kiln System

**Photo B-2.** Untreated Soil (0 to 5 feet bgs sample)

**Photo B-3.** Kiln Residue (550 °C for 30 minutes; 0 to 5 feet bgs sample)

**Photo B-4.** Untreated Soil (5 to 10 feet bgs sample)

**Photo B-5.** Kiln Residue (550 °C for 30 minutes; 5 to 10 feet bgs sample)

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# Appendix C
# Bench Scale Analytical Data

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APPENDIX C-1

**Soil Washing Data**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| MATRIX | Station ID | Sample ID | Sample Type | Date Collected | Northing | Easting | Upper Depth | Lower Depth | Method | Parameter Class | CAS | Parameter ID | Parameter Name | Conc | Q | Unit | MDL | RL | Detected |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | CDBS1045_S | CDBS1045D105 | FD | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 72-54-8 | DDD44 | 4,4'-DDD | 1.3 | U | µg/kg | 1.3 | 1.3 | N |
| SO | CDBS1045_S | CDBS1045D105 | FD | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 72-55-9 | DDE44 | 4,4'-DDE | 1.3 | U | µg/kg | 1.3 | 1.3 | N |
| SO | CDBS1045_S | CDBS1045D105 | FD | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 50-29-3 | DDT44 | 4,4'-DDT | 5.7 | J | µg/kg | 1.3 | 1.3 | Y |
| SO | CDBS1045_S | CDBS1045D105 | FD | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 309-00-2 | ALDRIN | Aldrin | 1.3 | U | µg/kg | 1.3 | 1.3 | N |
| SO | CDBS1045_S | CDBS1045D105 | FD | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 319-84-6 | BHCALPHA | Alpha-BHC | 1.3 | U | µg/kg | 1.3 | 1.3 | N |
| SO | CDBS1045_S | CDBS1045D105 | FD | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 5103-71-9 | CHLORDANEA | Alpha-Chlordane | 1.3 | U | µg/kg | 1.3 | 1.3 | N |
| SO | CDBS1045_S | CDBS1045D105 | FD | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-36-0 | SB | Antimony | 0.164 | U | mg/kg | 0.631 | 0.631 | N |
| SO | CDBS1045_S | CDBS1045D105 | FD | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 12674-11-2 | PCB1016 | Aroclor 1016 | 13 | U | µg/kg | 13 | 13 | N |
| SO | CDBS1045_S | CDBS1045D105 | FD | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 11104-28-2 | PCB1221 | Aroclor 1221 | 13 | U | µg/kg | 13 | 13 | N |
| SO | CDBS1045_S | CDBS1045D105 | FD | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 11141-16-5 | PCB1232 | Aroclor 1232 | 13 | U | µg/kg | 13 | 13 | N |
| SO | CDBS1045_S | CDBS1045D105 | FD | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 53469-21-9 | PCB1242 | Aroclor 1242 | 13 | U | µg/kg | 13 | 13 | N |
| SO | CDBS1045_S | CDBS1045D105 | FD | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 12672-29-6 | PCB1248 | Aroclor 1248 | 13 | U | µg/kg | 13 | 13 | N |
| SO | CDBS1045_S | CDBS1045D105 | FD | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 11097-69-1 | PCB1254 | Aroclor 1254 | 13 | U | µg/kg | 13 | 13 | N |
| SO | CDBS1045_S | CDBS1045D105 | FD | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 11096-82-5 | PCB1260 | Aroclor 1260 | 13 | U | µg/kg | 13 | 13 | N |
| SO | CDBS1045_S | CDBS1045D105 | FD | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 37324-23-5 | PCB1262 | Aroclor 1262 | 13 | U | µg/kg | 13 | 13 | N |
| SO | CDBS1045_S | CDBS1045D105 | FD | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-38-2 | AS | Arsenic | 1.31 | = | mg/kg | 0.631 | 0.631 | Y |
| SO | CDBS1045_S | CDBS1045D105 | FD | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-39-3 | BA | Barium | 28.9 | = | mg/kg | 0.631 | 0.631 | Y |
| SO | CDBS1045_S | CDBS1045D105 | FD | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-41-7 | BE | Beryllium | 0.259 | U | mg/kg | 0.378 | 0.378 | N |
| SO | CDBS1045_S | CDBS1045D105 | FD | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 319-85-7 | BHCBETA | Beta-BHC | 1.3 | U | µg/kg | 1.3 | 1.3 | N |
| SO | CDBS1045_S | CDBS1045D105 | FD | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-43-9 | CD | Cadmium | 0.153 | J | mg/kg | 0.151 | 0.252 | Y |
| SO | CDBS1045_S | CDBS1045D105 | FD | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 57-74-9 | CHLORDANE | Chlordane | 13 | U | µg/kg | 13 | 13 | N |
| SO | CDBS1045_S | CDBS1045D105 | FD | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-47-3 | CR | Chromium | 7.68 | = | mg/kg | 1.26 | 1.26 | Y |
| SO | CDBS1045_S | CDBS1045D105 | FD | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-48-4 | CO | Cobalt | 2.46 | = | mg/kg | 0.631 | 0.631 | Y |
| SO | CDBS1045_S | CDBS1045D105 | FD | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-50-8 | CU | Copper | 3.6 | = | mg/kg | 0.252 | 0.252 | Y |
| SO | CDBS1045_S | CDBS1045D105 | FD | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 319-86-8 | BHCDELTA | Delta-BHC | 1.3 | U | µg/kg | 1.3 | 1.3 | N |
| SO | CDBS1045_S | CDBS1045D105 | FD | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 60-57-1 | DIELDRIN | Dieldrin | 1.3 | U | µg/kg | 1.3 | 1.3 | N |
| SO | CDBS1045_S | CDBS1045D105 | FD | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | M8015D | HC | EFHD (C12-C14) | 4786 | Diesel Range Organics (C12-C14) | 6300 | U | µg/kg | 6300 | 6300 | N |
| SO | CDBS1045_S | CDBS1045D105 | FD | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | M8015D | HC | EFHD (C15-C20) | EFHDC15C20 | Diesel Range Organics (C15-C20) | 6300 | U | µg/kg | 6300 | 6300 | N |
| SO | CDBS1045_S | CDBS1045D105 | FD | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | M8015D | HC | EFHD (C21-C30) | EFHDC21C30 | Diesel Range Organics (C21-C30) | 6300 | U | µg/kg | 6300 | 6300 | N |
| SO | CDBS1045_S | CDBS1045D105 | FD | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | M8015D | HC | EFHD (C8-C11) | EFHD (C8-C11) | Diesel Range Organics (C8-C11) | 6300 | U | µg/kg | 6300 | 6300 | N |
| SO | CDBS1045_S | CDBS1045D105 | FD | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 959-98-8 | ENDOSULFANA | Endosulfan I | 1.3 | U | µg/kg | 1.3 | 1.3 | N |
| SO | CDBS1045_S | CDBS1045D105 | FD | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 33213-65-9 | ENDOSULFANB | Endosulfan II | 1.3 | U | µg/kg | 1.3 | 1.3 | N |
| SO | CDBS1045_S | CDBS1045D105 | FD | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 1031-07-8 | ENDOSULFANS | Endosulfan Sulfate | 1.3 | U | µg/kg | 1.3 | 1.3 | N |
| SO | CDBS1045_S | CDBS1045D105 | FD | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 72-20-8 | ENDRIN | Endrin | 1.3 | U | µg/kg | 1.3 | 1.3 | N |
| SO | CDBS1045_S | CDBS1045D105 | FD | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 7421-93-4 | ENDRINALD | Endrin Aldehyde | 1.3 | U | µg/kg | 1.3 | 1.3 | N |
| SO | CDBS1045_S | CDBS1045D105 | FD | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 53494-70-5 | ENDRINKET | Endrin ketone | 1.3 | U | µg/kg | 1.3 | 1.3 | N |
| SO | CDBS1045_S | CDBS1045D105 | FD | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 58-89-9 | BHCGAMMA | gamma-BHC | 1.3 | U | µg/kg | 1.3 | 1.3 | N |
| SO | CDBS1045_S | CDBS1045D105 | FD | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8015B | HC | GRO C4-C12 | 4541 | GRO (C4-C12) | 630 | U | µg/kg | 630 | 630 | N |
| SO | CDBS1045_S | CDBS1045D105 | FD | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 76-44-8 | HEPTACHLOR | Heptachlor | 1.3 | U | µg/kg | 1.3 | 1.3 | N |
| SO | CDBS1045_S | CDBS1045D105 | FD | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 1024-57-3 | HEPT-EPOX | Heptachlor Epoxide | 1.3 | U | µg/kg | 1.3 | 1.3 | N |
| SO | CDBS1045_S | CDBS1045D105 | FD | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7439-92-1 | PB | Lead | 12.7 | = | mg/kg | 0.504 | 0.504 | Y |
| SO | CDBS1045_S | CDBS1045D105 | FD | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW7471A | INO | 7439-97-6 | HG | Mercury | 0.00766 | = | mg/kg | 0.109 | 0.109 | N |
| SO | CDBS1045_S | CDBS1045D105 | FD | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 72-43-5 | MTXYCL | Methoxychlor | 1.3 | U | µg/kg | 1.3 | 1.3 | N |
| SO | CDBS1045_S | CDBS1045D105 | FD | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 2385-85-5 | MIREX | Mirex | 1.3 | U | µg/kg | 1.3 | 1.3 | N |
| SO | CDBS1045_S | CDBS1045D105 | FD | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7439-98-7 | MO | Molybdenum | 0.174 | U | mg/kg | 0.126 | 0.126 | N |
| SO | CDBS1045_S | CDBS1045D105 | FD | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-02-0 | NI | Nickel | 3.8 | = | mg/kg | 0.504 | 0.504 | Y |
| SO | CDBS1045_S | CDBS1045D105 | FD | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | M8015D | HC | EFHD (C31-C40) | 4503 | ORO (C31-C40) | 5900 | J | µg/kg | 2000 | 6300 | Y |
| SO | CDBS1045_S | CDBS1045D105 | FD | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 11100-14-4 | PCB1268 | PCB-1268 (Aroclor 1268) | 13 | U | µg/kg | 13 | 13 | N |
| SO | CDBS1045_S | CDBS1045D105 | FD | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7782-49-2 | SE | Selenium | 0.333 | U | mg/kg | 1.26 | 1.26 | N |
| SO | CDBS1045_S | CDBS1045D105 | FD | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-22-4 | AG | Silver | 0.179 | U | mg/kg | 0.252 | 0.252 | N |
| SO | CDBS1045_S | CDBS1045D105 | FD | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-28-0 | TL | Thallium | 0.132 | U | mg/kg | 0.252 | 0.252 | N |
| SO | CDBS1045_S | CDBS1045D105 | FD | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | A2540B | GENCHEM | TSO | TSO | Total Solids | 79.3 | = | PERCENT | | | Y |
| SO | CDBS1045_S | CDBS1045D105 | FD | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 8001-35-2 | TOXAP | Toxaphene | 25 | U | µg/kg | 25 | 25 | N |
| SO | CDBS1045_S | CDBS1045D105 | FD | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-62-2 | V | Vanadium | 10.8 | = | mg/kg | 1.26 | 1.26 | Y |
| SO | CDBS1045_S | CDBS1045D105 | FD | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-66-6 | ZN | Zinc | 41.8 | J | mg/kg | 6.31 | 6.31 | Y |
| SO | CDBS1045_S | CDBS1045D122 | FD | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 72-54-8 | DDD44 | 4,4'-DDD | 1.3 | U | µg/kg | 1.3 | 1.3 | N |
| SO | CDBS1045_S | CDBS1045D122 | FD | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 72-55-9 | DDE44 | 4,4'-DDE | 1.3 | U | µg/kg | 1.3 | 1.3 | N |
| SO | CDBS1045_S | CDBS1045D122 | FD | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 50-29-3 | DDT44 | 4,4'-DDT | 2 | = | µg/kg | 1.3 | 1.3 | Y |
| SO | CDBS1045_S | CDBS1045D122 | FD | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 309-00-2 | ALDRIN | Aldrin | 1.3 | U | µg/kg | 1.3 | 1.3 | N |
| SO | CDBS1045_S | CDBS1045D122 | FD | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 319-84-6 | BHCALPHA | Alpha-BHC | 1.3 | U | µg/kg | 1.3 | 1.3 | N |
| SO | CDBS1045_S | CDBS1045D122 | FD | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 5103-71-9 | CHLORDANEA | Alpha-Chlordane | 1.3 | U | µg/kg | 1.3 | 1.3 | N |
| SO | CDBS1045_S | CDBS1045D122 | FD | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-36-0 | SB | Antimony | 0.167 | U | mg/kg | 0.639 | 0.639 | N |
| SO | CDBS1045_S | CDBS1045D122 | FD | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 12674-11-2 | PCB1016 | Aroclor 1016 | 13 | U | µg/kg | 13 | 13 | N |
| SO | CDBS1045_S | CDBS1045D122 | FD | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 11104-28-2 | PCB1221 | Aroclor 1221 | 13 | U | µg/kg | 13 | 13 | N |
| SO | CDBS1045_S | CDBS1045D122 | FD | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 11141-16-5 | PCB1232 | Aroclor 1232 | 13 | U | µg/kg | 13 | 13 | N |
| SO | CDBS1045_S | CDBS1045D122 | FD | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 53469-21-9 | PCB1242 | Aroclor 1242 | 13 | U | µg/kg | 13 | 13 | N |
| SO | CDBS1045_S | CDBS1045D122 | FD | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 12672-29-6 | PCB1248 | Aroclor 1248 | 13 | U | µg/kg | 13 | 13 | N |
| SO | CDBS1045_S | CDBS1045D122 | FD | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 11097-69-1 | PCB1254 | Aroclor 1254 | 13 | U | µg/kg | 13 | 13 | N |
| SO | CDBS1045_S | CDBS1045D122 | FD | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 11096-82-5 | PCB1260 | Aroclor 1260 | 13 | U | µg/kg | 13 | 13 | N |

APPENDIX C-1

**Soil Washing Data**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| MATRIX | Station ID | Sample ID | Sample Type | Date Collected | Northing | Easting | Upper Depth | Lower Depth | Method | Parameter Class | CAS | Parameter ID | Parameter Name | Conc | Q | Unit | MDL | RL | Detected |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | CDBS1045_S | CDBS1045D122 | FD | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 37324-23-5 | PCB1262 | Aroclor 1262 | 13 | U | µg/kg | 13 | 13 | N |
| SO | CDBS1045_S | CDBS1045D122 | FD | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-38-2 | AS | Arsenic | 0.942 | U | mg/kg | 0.639 | 0.639 | Y |
| SO | CDBS1045_S | CDBS1045D122 | FD | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-39-3 | BA | Barium | 23.9 | = | mg/kg | 0.639 | 0.639 | Y |
| SO | CDBS1045_S | CDBS1045D122 | FD | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-41-7 | BE | Beryllium | 0.263 | U | mg/kg | 0.384 | 0.384 | N |
| SO | CDBS1045_S | CDBS1045D122 | FD | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 319-85-7 | BHCBETA | Beta-BHC | 1.3 | U | µg/kg | 1.3 | 1.3 | N |
| SO | CDBS1045_S | CDBS1045D122 | FD | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-43-9 | CD | Cadmium | 0.153 | U | mg/kg | 0.256 | 0.256 | N |
| SO | CDBS1045_S | CDBS1045D122 | FD | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 57-74-9 | CHLORDANE | Chlordane | 13 | U | µg/kg | 13 | 13 | N |
| SO | CDBS1045_S | CDBS1045D122 | FD | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-47-3 | CR | Chromium | 5.29 | = | mg/kg | 1.28 | 1.28 | Y |
| SO | CDBS1045_S | CDBS1045D122 | FD | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-48-4 | CO | Cobalt | 2.12 | = | mg/kg | 0.639 | 0.639 | Y |
| SO | CDBS1045_S | CDBS1045D122 | FD | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-50-8 | CU | Copper | 2.58 | = | mg/kg | 0.256 | 0.256 | Y |
| SO | CDBS1045_S | CDBS1045D122 | FD | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 319-86-8 | BHCDELTA | Delta-BHC | 1.3 | U | µg/kg | 1.3 | 1.3 | N |
| SO | CDBS1045_S | CDBS1045D122 | FD | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 60-57-1 | DIELDRIN | Dieldrin | 1.3 | U | µg/kg | 1.3 | 1.3 | N |
| SO | CDBS1045_S | CDBS1045D122 | FD | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | M8015D | HC | EFHD (C12-C14) | 4786 | Diesel Range Organics (C12-C14) | 6500 | U | µg/kg | 6500 | 6500 | N |
| SO | CDBS1045_S | CDBS1045D122 | FD | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | M8015D | HC | EFHD (C15-C20) | EFHDC15C20 | Diesel Range Organics (C15-C20) | 6500 | U | µg/kg | 6500 | 6500 | N |
| SO | CDBS1045_S | CDBS1045D122 | FD | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | M8015D | HC | EFHD (C21-C30) | EFHDC21C30 | Diesel Range Organics (C21-C30) | 6500 | U | µg/kg | 6500 | 6500 | N |
| SO | CDBS1045_S | CDBS1045D122 | FD | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | M8015D | HC | EFHD (C8-C11) | EFHD (C8-C11) | Diesel Range Organics (C8-C11) | 4100 | J | µg/kg | 2000 | 6500 | Y |
| SO | CDBS1045_S | CDBS1045D122 | FD | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 959-98-8 | ENDOSULFANA | Endosulfan I | 1.3 | U | µg/kg | 1.3 | 1.3 | N |
| SO | CDBS1045_S | CDBS1045D122 | FD | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 33213-65-9 | ENDOSULFANB | Endosulfan II | 1.3 | U | µg/kg | 1.3 | 1.3 | N |
| SO | CDBS1045_S | CDBS1045D122 | FD | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 1031-07-8 | ENDOSULFANS | Endosulfan Sulfate | 1.3 | U | µg/kg | 1.3 | 1.3 | N |
| SO | CDBS1045_S | CDBS1045D122 | FD | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 72-20-8 | ENDRIN | Endrin | 1.3 | U | µg/kg | 1.3 | 1.3 | N |
| SO | CDBS1045_S | CDBS1045D122 | FD | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 7421-93-4 | ENDRINALD | Endrin Aldehyde | 1.3 | U | µg/kg | 1.3 | 1.3 | N |
| SO | CDBS1045_S | CDBS1045D122 | FD | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 53494-70-5 | ENDRINKET | Endrin ketone | 1.3 | U | µg/kg | 1.3 | 1.3 | N |
| SO | CDBS1045_S | CDBS1045D122 | FD | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 58-89-9 | BHCGAMMA | gamma-BHC | 1.3 | U | µg/kg | 1.3 | 1.3 | N |
| SO | CDBS1045_S | CDBS1045D122 | FD | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8015B | HC | GRO C4-C12 | 4541 | GRO (C4-C12) | 610 | J | µg/kg | 160 | 640 | Y |
| SO | CDBS1045_S | CDBS1045D122 | FD | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 76-44-8 | HEPTACHLOR | Heptachlor | 1.3 | U | µg/kg | 1.3 | 1.3 | N |
| SO | CDBS1045_S | CDBS1045D122 | FD | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 1024-57-3 | HEPT-EPOX | Heptachlor Epoxide | 1.3 | U | µg/kg | 1.3 | 1.3 | N |
| SO | CDBS1045_S | CDBS1045D122 | FD | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7439-92-1 | PB | Lead | 4.61 | = | mg/kg | 0.512 | 0.512 | Y |
| SO | CDBS1045_S | CDBS1045D122 | FD | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW7471A | INO | 7439-97-6 | HG | Mercury | 0.00777 | U | mg/kg | 0.11 | 0.11 | N |
| SO | CDBS1045_S | CDBS1045D122 | FD | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 72-43-5 | MTXYCL | Methoxychlor | 1.3 | U | µg/kg | 1.3 | 1.3 | N |
| SO | CDBS1045_S | CDBS1045D122 | FD | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 2385-85-5 | MIREX | Mirex | 1.3 | U | µg/kg | 1.3 | 1.3 | N |
| SO | CDBS1045_S | CDBS1045D122 | FD | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7439-98-7 | MO | Molybdenum | 0.0341 | U | mg/kg | 0.128 | 0.128 | N |
| SO | CDBS1045_S | CDBS1045D122 | FD | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-02-0 | NI | Nickel | 3.33 | = | mg/kg | 0.512 | 0.512 | Y |
| SO | CDBS1045_S | CDBS1045D122 | FD | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | M8015D | HC | EFHD (C31-C40) | 4503 | ORO (C31-C40) | 6500 | UJ | µg/kg | 6500 | 6500 | N |
| SO | CDBS1045_S | CDBS1045D122 | FD | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 11100-14-4 | PCB1268 | PCB-1268 (Aroclor 1268) | 13 | U | µg/kg | 13 | 13 | N |
| SO | CDBS1045_S | CDBS1045D122 | FD | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7782-49-2 | SE | Selenium | 0.338 | U | mg/kg | 1.28 | 1.28 | N |
| SO | CDBS1045_S | CDBS1045D122 | FD | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-22-4 | AG | Silver | 0.182 | U | mg/kg | 0.256 | 0.256 | N |
| SO | CDBS1045_S | CDBS1045D122 | FD | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-28-0 | TL | Thallium | 0.134 | U | mg/kg | 0.256 | 0.256 | N |
| SO | CDBS1045_S | CDBS1045D122 | FD | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | A2540B | GENCHEM | TSO | TSO | Total Solids | 78.2 | = | PERCENT | | | Y |
| SO | CDBS1045_S | CDBS1045D122 | FD | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 8001-35-2 | TOXAP | Toxaphene | 26 | U | µg/kg | 26 | 26 | N |
| SO | CDBS1045_S | CDBS1045D122 | FD | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-62-2 | V | Vanadium | 7.71 | = | mg/kg | 1.28 | 1.28 | Y |
| SO | CDBS1045_S | CDBS1045D122 | FD | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-66-6 | ZN | Zinc | 25.7 | = | mg/kg | 6.39 | 6.39 | Y |
| SO | CDBS1045_S | CDBS1045S100 | N | 5/2/2014 | 265693.857 | 1786730.644 | 0 | 5 | M8015D | HC | EFHD (C12-C14) | 4786 | Diesel Range Organics (C12-C14) | 5300 | U | µg/kg | 5300 | 5300 | N |
| SO | CDBS1045_S | CDBS1045S100 | N | 5/2/2014 | 265693.857 | 1786730.644 | 0 | 5 | M8015D | HC | EFHD (C15-C20) | EFHDC15C20 | Diesel Range Organics (C15-C20) | 5300 | U | µg/kg | 5300 | 5300 | N |
| SO | CDBS1045_S | CDBS1045S100 | N | 5/2/2014 | 265693.857 | 1786730.644 | 0 | 5 | M8015D | HC | EFHD (C21-C30) | EFHDC21C30 | Diesel Range Organics (C21-C30) | 34000 | = | µg/kg | 5300 | 5300 | Y |
| SO | CDBS1045_S | CDBS1045S100 | N | 5/2/2014 | 265693.857 | 1786730.644 | 0 | 5 | M8015D | HC | EFHD (C8-C11) | EFHD (C8-C11) | Diesel Range Organics (C8-C11) | 5300 | U | µg/kg | 5300 | 5300 | N |
| SO | CDBS1045_S | CDBS1045S100 | N | 5/2/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8015B | HC | GRO C4-C12 | 4541 | GRO (C4-C12) | 530 | U | µg/kg | 530 | 530 | N |
| SO | CDBS1045_S | CDBS1045S100 | N | 5/2/2014 | 265693.857 | 1786730.644 | 0 | 5 | M8015D | HC | EFHD (C31-C40) | 4503 | ORO (C31-C40) | 64000 | = | µg/kg | 5300 | 5300 | Y |
| SO | CDBS1045_S | CDBS1045S101 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 72-54-8 | DDD44 | 4,4'-DDD | 1 | U | µg/kg | 1 | 1 | N |
| SO | CDBS1045_S | CDBS1045S101 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 72-55-9 | DDE44 | 4,4'-DDE | 0.45 | J | µg/kg | 0.3 | 1 | Y |
| SO | CDBS1045_S | CDBS1045S101 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 50-29-3 | DDT44 | 4,4'-DDT | 0.41 | J | µg/kg | 0.34 | 1 | Y |
| SO | CDBS1045_S | CDBS1045S101 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 309-00-2 | ALDRIN | Aldrin | 1 | U | µg/kg | 1 | 1 | N |
| SO | CDBS1045_S | CDBS1045S101 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 319-84-6 | BHCALPHA | Alpha-BHC | 1 | U | µg/kg | 1 | 1 | N |
| SO | CDBS1045_S | CDBS1045S101 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 5103-71-9 | CHLORDANEA | Alpha-Chlordane | 1.2 | = | µg/kg | 1 | 1 | Y |
| SO | CDBS1045_S | CDBS1045S101 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-36-0 | SB | Antimony | 0.131 | J | mg/kg | 0.131 | 0.503 | Y |
| SO | CDBS1045_S | CDBS1045S101 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 12674-11-2 | PCB1016 | Aroclor 1016 | 10 | U | µg/kg | 10 | 10 | N |
| SO | CDBS1045_S | CDBS1045S101 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 11104-28-2 | PCB1221 | Aroclor 1221 | 10 | U | µg/kg | 10 | 10 | N |
| SO | CDBS1045_S | CDBS1045S101 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 11141-16-5 | PCB1232 | Aroclor 1232 | 10 | U | µg/kg | 10 | 10 | N |
| SO | CDBS1045_S | CDBS1045S101 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 53469-21-9 | PCB1242 | Aroclor 1242 | 10 | U | µg/kg | 10 | 10 | N |
| SO | CDBS1045_S | CDBS1045S101 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 12672-29-6 | PCB1248 | Aroclor 1248 | 10 | U | µg/kg | 10 | 10 | N |
| SO | CDBS1045_S | CDBS1045S101 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 11097-69-1 | PCB1254 | Aroclor 1254 | 10 | U | µg/kg | 10 | 10 | N |
| SO | CDBS1045_S | CDBS1045S101 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 11096-82-5 | PCB1260 | Aroclor 1260 | 10 | U | µg/kg | 10 | 10 | N |
| SO | CDBS1045_S | CDBS1045S101 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 37324-23-5 | PCB1262 | Aroclor 1262 | 10 | U | µg/kg | 10 | 10 | N |
| SO | CDBS1045_S | CDBS1045S101 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-38-2 | AS | Arsenic | 4.15 | = | mg/kg | 0.503 | 0.503 | Y |
| SO | CDBS1045_S | CDBS1045S101 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-39-3 | BA | Barium | 41.1 | = | mg/kg | 0.503 | 0.503 | Y |
| SO | CDBS1045_S | CDBS1045S101 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-41-7 | BE | Beryllium | 0.245 | J | mg/kg | 0.207 | 0.302 | Y |
| SO | CDBS1045_S | CDBS1045S101 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 319-85-7 | BHCBETA | Beta-BHC | 1 | U | µg/kg | 1 | 1 | N |
| SO | CDBS1045_S | CDBS1045S101 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-43-9 | CD | Cadmium | 0.218 | = | mg/kg | 0.201 | 0.201 | Y |
| SO | CDBS1045_S | CDBS1045S101 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 57-74-9 | CHLORDANE | Chlordane | 16 | = | µg/kg | 10 | 10 | Y |
| SO | CDBS1045_S | CDBS1045S101 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-47-3 | CR | Chromium | 16.6 | = | mg/kg | 1.01 | 1.01 | Y |

APPENDIX C-1

**Soil Washing Data**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| MATRIX | Station ID | Sample ID | Sample Type | Date Collected | Northing | Easting | Upper Depth | Lower Depth | Method | Parameter Class | CAS | Parameter ID | Parameter Name | Conc | Q | Unit | MDL | RL | Detected |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | CDBS1045_S | CDBS1045S101 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-48-4 | CO | Cobalt | 4.49 | = | mg/kg | 0.503 | 0.503 | Y |
| SO | CDBS1045_S | CDBS1045S101 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-50-8 | CU | Copper | 10.8 | = | mg/kg | 0.201 | 0.201 | Y |
| SO | CDBS1045_S | CDBS1045S101 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 319-86-8 | BHCDELTA | Delta-BHC | 0.61 | J | µg/kg | 0.26 | 1 | Y |
| SO | CDBS1045_S | CDBS1045S101 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 60-57-1 | DIELDRIN | Dieldrin | 1 | U | µg/kg | 1 | 1 | N |
| SO | CDBS1045_S | CDBS1045S101 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | M8015D | HC | EFHD (C12-C14) | 4786 | Diesel Range Organics (C12-C14) | 25000 | UJ | µg/kg | 25000 | 25000 | N |
| SO | CDBS1045_S | CDBS1045S101 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | M8015D | HC | EFHD (C15-C20) | EFHDC15C20 | Diesel Range Organics (C15-C20) | 25000 | UJ | µg/kg | 25000 | 25000 | N |
| SO | CDBS1045_S | CDBS1045S101 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | M8015D | HC | EFHD (C21-C30) | EFHDC21C30 | Diesel Range Organics (C21-C30) | 120000 | J | µg/kg | 25000 | 25000 | Y |
| SO | CDBS1045_S | CDBS1045S101 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | M8015D | HC | EFHD (C8-C11) | EFHD (C8-C11) | Diesel Range Organics (C8-C11) | 25000 | UJ | µg/kg | 25000 | 25000 | N |
| SO | CDBS1045_S | CDBS1045S101 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 959-98-8 | ENDOSULFANA | Endosulfan I | 1 | U | µg/kg | 1 | 1 | N |
| SO | CDBS1045_S | CDBS1045S101 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 33213-65-9 | ENDOSULFANB | Endosulfan II | 1 | U | µg/kg | 1 | 1 | N |
| SO | CDBS1045_S | CDBS1045S101 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 1031-07-8 | ENDOSULFANS | Endosulfan Sulfate | 1 | U | µg/kg | 1 | 1 | N |
| SO | CDBS1045_S | CDBS1045S101 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 72-20-8 | ENDRIN | Endrin | 0.37 | J | µg/kg | 0.36 | 1 | Y |
| SO | CDBS1045_S | CDBS1045S101 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 7421-93-4 | ENDRINALD | Endrin Aldehyde | 1 | U | µg/kg | 1 | 1 | N |
| SO | CDBS1045_S | CDBS1045S101 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 53494-70-5 | ENDRINKET | Endrin ketone | 1 | U | µg/kg | 1 | 1 | N |
| SO | CDBS1045_S | CDBS1045S101 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 58-89-9 | BHCGAMMA | gamma-BHC | 1 | U | µg/kg | 1 | 1 | N |
| SO | CDBS1045_S | CDBS1045S101 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8015B | HC | GRO C4-C12 | 4541 | GRO (C4-C12) | 520 | U | µg/kg | 520 | 520 | N |
| SO | CDBS1045_S | CDBS1045S101 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 76-44-8 | HEPTACHLOR | Heptachlor | 0.34 | J | µg/kg | 0.32 | 1 | Y |
| SO | CDBS1045_S | CDBS1045S101 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 1024-57-3 | HEPT-EPOX | Heptachlor Epoxide | 1 | U | µg/kg | 1 | 1 | N |
| SO | CDBS1045_S | CDBS1045S101 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7439-92-1 | PB | Lead | 4.96 | = | mg/kg | 0.402 | 0.402 | Y |
| SO | CDBS1045_S | CDBS1045S101 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW7471A | INO | 7439-97-6 | HG | Mercury | 0.00591 | U | mg/kg | 0.0838 | 0.0838 | N |
| SO | CDBS1045_S | CDBS1045S101 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 72-43-5 | MTXYCL | Methoxychlor | 1 | UJ | µg/kg | 1 | 1 | N |
| SO | CDBS1045_S | CDBS1045S101 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 2385-85-5 | MIREX | Mirex | 1 | U | µg/kg | 1 | 1 | N |
| SO | CDBS1045_S | CDBS1045S101 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7439-98-7 | MO | Molybdenum | 0.482 | = | mg/kg | 0.101 | 0.101 | Y |
| SO | CDBS1045_S | CDBS1045S101 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-02-0 | NI | Nickel | 7.77 | = | mg/kg | 0.402 | 0.402 | Y |
| SO | CDBS1045_S | CDBS1045S101 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | M8015D | HC | EFHD (C31-C40) | 4503 | ORO (C31-C40) | 390000 | J | µg/kg | 25000 | 25000 | Y |
| SO | CDBS1045_S | CDBS1045S101 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 11100-14-4 | PCB1268 | PCB-1268 (Aroclor 1268) | 10 | U | µg/kg | 10 | 10 | N |
| SO | CDBS1045_S | CDBS1045S101 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW9045D | GENCHEM | E-10139 | PH | pH | 7.26 | = | PH UNITS | | | Y |
| SO | CDBS1045_S | CDBS1045S101 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7782-49-2 | SE | Selenium | 0.289 | J | mg/kg | 0.266 | 1.01 | Y |
| SO | CDBS1045_S | CDBS1045S101 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-22-4 | AG | Silver | 0.143 | U | mg/kg | 0.201 | 0.201 | N |
| SO | CDBS1045_S | CDBS1045S101 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-28-0 | TL | Thallium | 0.106 | U | mg/kg | 0.201 | 0.201 | N |
| SO | CDBS1045_S | CDBS1045S101 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | A2540B | GENCHEM | TSO | TSO | Total Solids | 99.4 | = | PERCENT | | | Y |
| SO | CDBS1045_S | CDBS1045S101 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 8001-35-2 | TOXAP | Toxaphene | 20 | U | µg/kg | 20 | 20 | N |
| SO | CDBS1045_S | CDBS1045S101 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-62-2 | V | Vanadium | 21.8 | = | mg/kg | 1.01 | 1.01 | Y |
| SO | CDBS1045_S | CDBS1045S101 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-66-6 | ZN | Zinc | 35.9 | = | mg/kg | 5.03 | 5.03 | Y |
| SO | CDBS1045_S | CDBS1045S102 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 72-54-8 | DDD44 | 4,4'-DDD | 0.92 | J | µg/kg | 0.34 | 1.1 | Y |
| SO | CDBS1045_S | CDBS1045S102 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 72-55-9 | DDE44 | 4,4'-DDE | 4.4 | J | µg/kg | 1.1 | 1.1 | Y |
| SO | CDBS1045_S | CDBS1045S102 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 50-29-3 | DDT44 | 4,4'-DDT | 6.1 | J | µg/kg | 1.1 | 1.1 | Y |
| SO | CDBS1045_S | CDBS1045S102 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 309-00-2 | ALDRIN | Aldrin | 1.1 | U | µg/kg | 1.1 | 1.1 | N |
| SO | CDBS1045_S | CDBS1045S102 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 319-84-6 | BHCALPHA | Alpha-BHC | 1.1 | U | µg/kg | 1.1 | 1.1 | N |
| SO | CDBS1045_S | CDBS1045S102 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 5103-71-9 | CHLORDANEA | Alpha-Chlordane | 1.1 | U | µg/kg | 1.1 | 1.1 | N |
| SO | CDBS1045_S | CDBS1045S102 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-36-0 | SB | Antimony | 0.192 | J | mg/kg | 0.139 | 0.532 | Y |
| SO | CDBS1045_S | CDBS1045S102 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 12674-11-2 | PCB1016 | Aroclor 1016 | 11 | U | µg/kg | 11 | 11 | N |
| SO | CDBS1045_S | CDBS1045S102 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 11104-28-2 | PCB1221 | Aroclor 1221 | 11 | U | µg/kg | 11 | 11 | N |
| SO | CDBS1045_S | CDBS1045S102 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 11141-16-5 | PCB1232 | Aroclor 1232 | 11 | U | µg/kg | 11 | 11 | N |
| SO | CDBS1045_S | CDBS1045S102 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 53469-21-9 | PCB1242 | Aroclor 1242 | 11 | U | µg/kg | 11 | 11 | N |
| SO | CDBS1045_S | CDBS1045S102 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 12672-29-6 | PCB1248 | Aroclor 1248 | 11 | U | µg/kg | 11 | 11 | N |
| SO | CDBS1045_S | CDBS1045S102 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 11097-69-1 | PCB1254 | Aroclor 1254 | 11 | U | µg/kg | 11 | 11 | N |
| SO | CDBS1045_S | CDBS1045S102 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 11096-82-5 | PCB1260 | Aroclor 1260 | 11 | U | µg/kg | 11 | 11 | N |
| SO | CDBS1045_S | CDBS1045S102 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 37324-23-5 | PCB1262 | Aroclor 1262 | 11 | U | µg/kg | 11 | 11 | N |
| SO | CDBS1045_S | CDBS1045S102 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-38-2 | AS | Arsenic | 3.82 | = | mg/kg | 0.532 | 0.532 | Y |
| SO | CDBS1045_S | CDBS1045S102 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-39-3 | BA | Barium | 70.9 | = | mg/kg | 0.532 | 0.532 | Y |
| SO | CDBS1045_S | CDBS1045S102 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-41-7 | BE | Beryllium | 0.704 | = | mg/kg | 0.319 | 0.319 | Y |
| SO | CDBS1045_S | CDBS1045S102 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 319-85-7 | BHCBETA | Beta-BHC | 1.1 | U | µg/kg | 1.1 | 1.1 | N |
| SO | CDBS1045_S | CDBS1045S102 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-43-9 | CD | Cadmium | 0.487 | = | mg/kg | 0.213 | 0.213 | Y |
| SO | CDBS1045_S | CDBS1045S102 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 57-74-9 | CHLORDANE | Chlordane | 11 | U | µg/kg | 11 | 11 | N |
| SO | CDBS1045_S | CDBS1045S102 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-47-3 | CR | Chromium | 15.7 | = | mg/kg | 1.06 | 1.06 | Y |
| SO | CDBS1045_S | CDBS1045S102 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-48-4 | CO | Cobalt | 5.86 | = | mg/kg | 0.532 | 0.532 | Y |
| SO | CDBS1045_S | CDBS1045S102 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-50-8 | CU | Copper | 11.9 | = | mg/kg | 0.213 | 0.213 | Y |
| SO | CDBS1045_S | CDBS1045S102 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 319-86-8 | BHCDELTA | Delta-BHC | 1.1 | U | µg/kg | 1.1 | 1.1 | N |
| SO | CDBS1045_S | CDBS1045S102 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 60-57-1 | DIELDRIN | Dieldrin | 1.1 | U | µg/kg | 1.1 | 1.1 | N |
| SO | CDBS1045_S | CDBS1045S102 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | M8015D | HC | EFHD (C12-C14) | 4786 | Diesel Range Organics (C12-C14) | 5300 | U | µg/kg | 5300 | 5300 | N |
| SO | CDBS1045_S | CDBS1045S102 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | M8015D | HC | EFHD (C15-C20) | EFHDC15C20 | Diesel Range Organics (C15-C20) | 5300 | U | µg/kg | 5300 | 5300 | N |
| SO | CDBS1045_S | CDBS1045S102 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | M8015D | HC | EFHD (C21-C30) | EFHDC21C30 | Diesel Range Organics (C21-C30) | 19000 | = | µg/kg | 5300 | 5300 | Y |
| SO | CDBS1045_S | CDBS1045S102 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | M8015D | HC | EFHD (C8-C11) | EFHD (C8-C11) | Diesel Range Organics (C8-C11) | 5300 | U | µg/kg | 5300 | 5300 | N |
| SO | CDBS1045_S | CDBS1045S102 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 959-98-8 | ENDOSULFANA | Endosulfan I | 1.1 | U | µg/kg | 1.1 | 1.1 | N |
| SO | CDBS1045_S | CDBS1045S102 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 33213-65-9 | ENDOSULFANB | Endosulfan II | 1.1 | U | µg/kg | 1.1 | 1.1 | N |
| SO | CDBS1045_S | CDBS1045S102 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 1031-07-8 | ENDOSULFANS | Endosulfan Sulfate | 1.1 | U | µg/kg | 1.1 | 1.1 | N |
| SO | CDBS1045_S | CDBS1045S102 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 72-20-8 | ENDRIN | Endrin | 1.1 | U | µg/kg | 1.1 | 1.1 | N |
| SO | CDBS1045_S | CDBS1045S102 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 7421-93-4 | ENDRINALD | Endrin Aldehyde | 1.1 | U | µg/kg | 1.1 | 1.1 | N |

APPENDIX C-1

**Soil Washing Data**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| MATRIX | Station ID | Sample ID | Sample Type | Date Collected | Northing | Easting | Upper Depth | Lower Depth | Method | Parameter Class | CAS | Parameter ID | Parameter Name | Conc | Q | Unit | MDL | RL | Detected |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | CDBS1045_S | CDBS1045S102 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 53494-70-5 | ENDRINKET | Endrin ketone | 1.1 | U | µg/kg | 1.1 | 1.1 | N |
| SO | CDBS1045_S | CDBS1045S102 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 58-89-9 | BHCGAMMA | gamma-BHC | 1.1 | U | µg/kg | 1.1 | 1.1 | N |
| SO | CDBS1045_S | CDBS1045S102 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8015B | HC | GRO C4-C12 | 4541 | GRO (C4-C12) | 540 | U | µg/kg | 540 | 540 | N |
| SO | CDBS1045_S | CDBS1045S102 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 76-44-8 | HEPTACHLOR | Heptachlor | 1.1 | U | µg/kg | 530 | 1.1 | N |
| SO | CDBS1045_S | CDBS1045S102 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 1024-57-3 | HEPT-EPOX | Heptachlor Epoxide | 1.1 | U | µg/kg | 540 | 1.1 | N |
| SO | CDBS1045_S | CDBS1045S102 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7439-92-1 | PB | Lead | 23 | = | mg/kg | 510 | 0.426 | Y |
| SO | CDBS1045_S | CDBS1045S102 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW7471A | INO | 7439-97-6 | HG | Mercury | 0.0143 | J | mg/kg | 500 | 0.0844 | Y |
| SO | CDBS1045_S | CDBS1045S102 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 72-43-5 | MTXYCL | Methoxychlor | 1.1 | U | µg/kg | 530 | 1.1 | N |
| SO | CDBS1045_S | CDBS1045S102 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 2385-85-5 | MIREX | Mirex | 1.1 | U | µg/kg | 570 | 1.1 | N |
| SO | CDBS1045_S | CDBS1045S102 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7439-98-7 | MO | Molybdenum | 0.841 | = | mg/kg | 540 | 0.106 | Y |
| SO | CDBS1045_S | CDBS1045S102 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-02-0 | NI | Nickel | 9.63 | = | mg/kg | 0.426 | 0.426 | Y |
| SO | CDBS1045_S | CDBS1045S102 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | M8015D | HC | EFHD (C31-C40) | 4503 | ORO (C31-C40) | 39000 | = | µg/kg | 5300 | 5300 | Y |
| SO | CDBS1045_S | CDBS1045S102 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 11100-14-4 | PCB1268 | PCB-1268 (Aroclor 1268) | 11 | U | µg/kg | 11 | 11 | N |
| SO | CDBS1045_S | CDBS1045S102 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW9045D | GENCHEM | E-10139 | PH | pH | 6.89 | = | PH UNITS | | | Y |
| SO | CDBS1045_S | CDBS1045S102 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7782-49-2 | SE | Selenium | 0.354 | J | mg/kg | 0.281 | 1.06 | Y |
| SO | CDBS1045_S | CDBS1045S102 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-22-4 | AG | Silver | 0.648 | = | mg/kg | 0.213 | 0.213 | Y |
| SO | CDBS1045_S | CDBS1045S102 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW9081 | INO | 7440-23-5 | NA | Sodium | 11 | = | MEQ/0.1KG | 0.289 | 0.289 | Y |
| SO | CDBS1045_S | CDBS1045S102 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-28-0 | TL | Thallium | 0.203 | J | mg/kg | 0.112 | 0.213 | Y |
| SO | CDBS1045_S | CDBS1045S102 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | A2540B | GENCHEM | TSO | TSO | Total Solids | 94 | = | PERCENT | | | Y |
| SO | CDBS1045_S | CDBS1045S102 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 8001-35-2 | TOXAP | Toxaphene | 21 | U | µg/kg | 21 | 21 | N |
| SO | CDBS1045_S | CDBS1045S102 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-62-2 | V | Vanadium | 25.6 | = | mg/kg | 1.06 | 1.06 | Y |
| SO | CDBS1045_S | CDBS1045S102 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-66-6 | ZN | Zinc | 72.6 | = | mg/kg | 5.32 | 5.32 | Y |
| SO | CDBS1045_S | CDBS1045S104 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 35822-46-9 | HPCDD1234678 | 1,2,3,4,6,7,8-HpCDD | 228 | J | PG/G | 1.56 | 5.24 | Y |
| SO | CDBS1045_S | CDBS1045S104 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 67562-39-4 | HPCDF1234678 | 1,2,3,4,6,7,8-HpCDF | 39.8 | J | PG/G | 0.384 | 5.24 | Y |
| SO | CDBS1045_S | CDBS1045S104 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 55673-89-7 | HPCDF1234789 | 1,2,3,4,7,8,9-HpCDF | 3.2 | J | PG/G | 0.541 | 5.24 | Y |
| SO | CDBS1045_S | CDBS1045S104 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 39227-28-6 | HXCDD123478 | 1,2,3,4,7,8-HxCDD | 2.99 | J | PG/G | 0.39 | 5.24 | Y |
| SO | CDBS1045_S | CDBS1045S104 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 70648-26-9 | HXCDF123478 | 1,2,3,4,7,8-HxCDF | 3.3 | J | PG/G | 0.35 | 5.24 | Y |
| SO | CDBS1045_S | CDBS1045S104 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 57653-85-7 | HXCDD123678 | 1,2,3,6,7,8-HxCDD | 13.5 | J | PG/G | 0.327 | 5.24 | Y |
| SO | CDBS1045_S | CDBS1045S104 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 57117-44-9 | HXCDF123678 | 1,2,3,6,7,8-HxCDF | 2.32 | J | PG/G | 0.298 | 5.24 | Y |
| SO | CDBS1045_S | CDBS1045S104 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 19408-74-3 | HXCDD123789 | 1,2,3,7,8,9-HxCDD | 5.53 | J | PG/G | 0.377 | 5.24 | Y |
| SO | CDBS1045_S | CDBS1045S104 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 72918-21-9 | HXCDF123789 | 1,2,3,7,8,9-HxCDF | 1.33 | J | PG/G | 0.404 | 5.24 | Y |
| SO | CDBS1045_S | CDBS1045S104 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 40321-76-4 | PECDD12378 | 1,2,3,7,8-PeCDD | 1.27 | J | PG/G | 0.254 | 5.24 | Y |
| SO | CDBS1045_S | CDBS1045S104 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 57117-41-6 | PECDF12378 | 1,2,3,7,8-PeCDF | 0.754 | J | PG/G | 0.155 | 5.24 | Y |
| SO | CDBS1045_S | CDBS1045S104 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 60851-34-5 | HXCDF234678 | 2,3,4,6,7,8-HxCDF | 2.76 | J | PG/G | 0.329 | 5.24 | Y |
| SO | CDBS1045_S | CDBS1045S104 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 57117-31-4 | PECDF23478 | 2,3,4,7,8-PeCDF | 2.2 | J | PG/G | 0.154 | 5.24 | Y |
| SO | CDBS1045_S | CDBS1045S104 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 1746-01-6 | TCDD2378 | 2,3,7,8-TCDD | 0.117 | J | PG/G | 0.116 | 1.05 | Y |
| SO | CDBS1045_S | CDBS1045S104 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 51207-31-9 | TCDF2378 | 2,3,7,8-TCDF | 1.11 | J | PG/G | 0.423 | 1.05 | Y |
| SO | CDBS1045_S | CDBS1045S104 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-36-0 | SB | Antimony | 0.137 | U | mg/kg | 0.525 | 0.525 | N |
| SO | CDBS1045_S | CDBS1045S104 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 12674-11-2 | PCB1016 | Aroclor 1016 | 23 | U | µg/kg | 23 | 23 | N |
| SO | CDBS1045_S | CDBS1045S104 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 11104-28-2 | PCB1221 | Aroclor 1221 | 23 | U | µg/kg | 23 | 23 | N |
| SO | CDBS1045_S | CDBS1045S104 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 11141-16-5 | PCB1232 | Aroclor 1232 | 23 | U | µg/kg | 23 | 23 | N |
| SO | CDBS1045_S | CDBS1045S104 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 53469-21-9 | PCB1242 | Aroclor 1242 | 23 | U | µg/kg | 23 | 23 | N |
| SO | CDBS1045_S | CDBS1045S104 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 12672-29-6 | PCB1248 | Aroclor 1248 | 23 | U | µg/kg | 23 | 23 | N |
| SO | CDBS1045_S | CDBS1045S104 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 11097-69-1 | PCB1254 | Aroclor 1254 | 23 | U | µg/kg | 23 | 23 | N |
| SO | CDBS1045_S | CDBS1045S104 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 11096-82-5 | PCB1260 | Aroclor 1260 | 23 | U | µg/kg | 23 | 23 | N |
| SO | CDBS1045_S | CDBS1045S104 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 37324-23-5 | PCB1262 | Aroclor 1262 | 23 | U | µg/kg | 23 | 23 | N |
| SO | CDBS1045_S | CDBS1045S104 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-38-2 | AS | Arsenic | 2.06 | = | mg/kg | 0.525 | 0.525 | Y |
| SO | CDBS1045_S | CDBS1045S104 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-39-3 | BA | Barium | 30 | = | mg/kg | 0.525 | 0.525 | Y |
| SO | CDBS1045_S | CDBS1045S104 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-41-7 | BE | Beryllium | 0.324 | = | mg/kg | 0.315 | 0.315 | Y |
| SO | CDBS1045_S | CDBS1045S104 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-43-9 | CD | Cadmium | 0.241 | = | mg/kg | 0.21 | 0.21 | Y |
| SO | CDBS1045_S | CDBS1045S104 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-47-3 | CR | Chromium | 7.15 | = | mg/kg | 1.05 | 1.05 | Y |
| SO | CDBS1045_S | CDBS1045S104 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-48-4 | CO | Cobalt | 3.12 | = | mg/kg | 0.525 | 0.525 | Y |
| SO | CDBS1045_S | CDBS1045S104 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-50-8 | CU | Copper | 3.87 | = | mg/kg | 0.21 | 0.21 | Y |
| SO | CDBS1045_S | CDBS1045S104 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | M8015D | HC | EFHD (C12-C14) | 4786 | Diesel Range Organics (C12-C14) | 5400 | U | µg/kg | 5400 | 5400 | N |
| SO | CDBS1045_S | CDBS1045S104 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | M8015D | HC | EFHD (C15-C20) | EFHDC15C20 | Diesel Range Organics (C15-C20) | 5400 | U | µg/kg | 5400 | 5400 | N |
| SO | CDBS1045_S | CDBS1045S104 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | M8015D | HC | EFHD (C21-C30) | EFHDC21C30 | Diesel Range Organics (C21-C30) | 7700 | = | µg/kg | 5400 | 5400 | Y |
| SO | CDBS1045_S | CDBS1045S104 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | M8015D | HC | EFHD (C8-C11) | EFHD (C8-C11) | Diesel Range Organics (C8-C11) | 5400 | U | µg/kg | 5400 | 5400 | N |
| SO | CDBS1045_S | CDBS1045S104 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8015B | HC | GRO C4-C12 | 4541 | GRO (C4-C12) | 530 | U | µg/kg | 530 | 530 | N |
| SO | CDBS1045_S | CDBS1045S104 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7439-92-1 | PB | Lead | 6.52 | = | mg/kg | 0.42 | 0.42 | Y |
| SO | CDBS1045_S | CDBS1045S104 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW7471A | INO | 7439-97-6 | HG | Mercury | 0.00587 | U | mg/kg | 0.0834 | 0.0834 | N |
| SO | CDBS1045_S | CDBS1045S104 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7439-98-7 | MO | Molybdenum | 0.22 | U | mg/kg | 0.105 | 0.105 | N |
| SO | CDBS1045_S | CDBS1045S104 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-02-0 | NI | Nickel | 3.9 | = | mg/kg | 0.42 | 0.42 | Y |
| SO | CDBS1045_S | CDBS1045S104 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 39001-02-0 | OCDF | Octachlorodibenzofuran | 114 | J | PG/G | 0.662 | 10.5 | Y |
| SO | CDBS1045_S | CDBS1045S104 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 3268-87-9 | OCDD | Octachlorodibenzo-p-dioxin | 3930 | J | PG/G | 2.16 | 10.5 | Y |
| SO | CDBS1045_S | CDBS1045S104 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | M8015D | HC | EFHD (C31-C40) | 4503 | ORO (C31-C40) | 32000 | = | µg/kg | 5400 | 5400 | Y |
| SO | CDBS1045_S | CDBS1045S104 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 11100-14-4 | PCB1268 | PCB-1268 (Aroclor 1268) | 23 | U | µg/kg | 23 | 23 | N |
| SO | CDBS1045_S | CDBS1045S104 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7782-49-2 | SE | Selenium | 0.277 | U | mg/kg | 1.05 | 1.05 | N |
| SO | CDBS1045_S | CDBS1045S104 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-22-4 | AG | Silver | 0.149 | U | mg/kg | 0.21 | 0.21 | N |
| SO | CDBS1045_S | CDBS1045S104 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-28-0 | TL | Thallium | 0.11 | U | mg/kg | 0.21 | 0.21 | N |

APPENDIX C-1

**Soil Washing Data**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| MATRIX | Station ID | Sample ID | Sample Type | Date Collected | Northing | Easting | Upper Depth | Lower Depth | Method | Parameter Class | CAS | Parameter ID | Parameter Name | Conc | Q | Unit | MDL | RL | Detected |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | CDBS1045_S | CDBS1045S104 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 37871-00-4 | HPCDD | Total HpCDD | 663 | J | PG/G | 1.56 | 5.24 | Y |
| SO | CDBS1045_S | CDBS1045S104 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 38998-75-3 | HPCDF | Total HpCDF | 123 | J | PG/G | 0.384 | 5.24 | Y |
| SO | CDBS1045_S | CDBS1045S104 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 34465-46-8 | HXCDD | Total HxCDD | 76 | J | PG/G | 0.327 | 5.24 | Y |
| SO | CDBS1045_S | CDBS1045S104 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 55684-94-1 | HXCDF | Total HxCDF | 70.7 | J | PG/G | 0.298 | 5.24 | Y |
| SO | CDBS1045_S | CDBS1045S104 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW9060 | GENCHEM | 1-01-2 | TOC | Total Organic Carbon | 5440 | J | mg/kg | 33.3 | 100 | Y |
| SO | CDBS1045_S | CDBS1045S104 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 36088-22-9 | PECDD | Total PeCDD | 7.67 | J | PG/G | 0.254 | 5.24 | Y |
| SO | CDBS1045_S | CDBS1045S104 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 30402-15-4 | PECDF | Total PeCDF | 32.8 | J | PG/G | 0.0631 | 5.24 | Y |
| SO | CDBS1045_S | CDBS1045S104 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | A2540B | GENCHEM | TSO | TSO | Total Solids | 95.2 | = | PERCENT | | | Y |
| SO | CDBS1045_S | CDBS1045S104 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 41903-57-5 | TCDD | Total TCDD | 0.719 | J | PG/G | 0.116 | 1.05 | Y |
| SO | CDBS1045_S | CDBS1045S104 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 55722-27-5 | TCDF | Total TCDFs | 13.6 | J | PG/G | 0.291 | 1.05 | Y |
| SO | CDBS1045_S | CDBS1045S104 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-62-2 | V | Vanadium | 10.7 | = | mg/kg | 1.05 | 1.05 | Y |
| SO | CDBS1045_S | CDBS1045S104 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-66-6 | ZN | Zinc | 28.9 | = | mg/kg | 5.25 | 5.25 | Y |
| SO | CDBS1045_S | CDBS1045S105 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 35822-46-9 | HPCDD1234678 | 1,2,3,4,6,7,8-HpCDD | 62.2 | J | PG/G | 0.955 | 7 | Y |
| SO | CDBS1045_S | CDBS1045S105 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 67562-39-4 | HPCDF1234678 | 1,2,3,4,6,7,8-HpCDF | 12.8 | J | PG/G | 0.256 | 7 | Y |
| SO | CDBS1045_S | CDBS1045S105 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 55673-89-7 | HPCDF1234789 | 1,2,3,4,7,8,9-HpCDF | 0.89 | J | PG/G | 0.361 | 7 | Y |
| SO | CDBS1045_S | CDBS1045S105 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 39227-28-6 | HXCDD123478 | 1,2,3,4,7,8-HxCDD | 0.817 | J | PG/G | 0.442 | 7 | Y |
| SO | CDBS1045_S | CDBS1045S105 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 70648-26-9 | HXCDF123478 | 1,2,3,4,7,8-HxCDF | 0.91 | J | PG/G | 0.245 | 7 | Y |
| SO | CDBS1045_S | CDBS1045S105 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 57653-85-7 | HXCDD123678 | 1,2,3,6,7,8-HxCDD | 3.77 | J | PG/G | 0.37 | 7 | Y |
| SO | CDBS1045_S | CDBS1045S105 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 57117-44-9 | HXCDF123678 | 1,2,3,6,7,8-HxCDF | 0.722 | J | PG/G | 0.207 | 7 | Y |
| SO | CDBS1045_S | CDBS1045S105 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 19408-74-3 | HXCDD123789 | 1,2,3,7,8,9-HxCDD | 1.46 | J | PG/G | 0.425 | 7 | Y |
| SO | CDBS1045_S | CDBS1045S105 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 72918-21-9 | HXCDF123789 | 1,2,3,7,8,9-HxCDF | 0.42 | U | PG/G | 0.283 | 7 | N |
| SO | CDBS1045_S | CDBS1045S105 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 40321-76-4 | PECDD12378 | 1,2,3,7,8-PeCDD | 0.353 | U | PG/G | 0.224 | 7 | N |
| SO | CDBS1045_S | CDBS1045S105 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 57117-41-6 | PECDF12378 | 1,2,3,7,8-PeCDF | 0.258 | U | PG/G | 0.153 | 7 | N |
| SO | CDBS1045_S | CDBS1045S105 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 60851-34-5 | HXCDF234678 | 2,3,4,6,7,8-HxCDF | 0.873 | J | PG/G | 0.23 | 7 | Y |
| SO | CDBS1045_S | CDBS1045S105 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 57117-31-4 | PECDF23478 | 2,3,4,7,8-PeCDF | 0.689 | J | PG/G | 0.152 | 7 | Y |
| SO | CDBS1045_S | CDBS1045S105 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 1746-01-6 | TCDD2378 | 2,3,7,8-TCDD | 0.132 | UJ | PG/G | 0.132 | 1.4 | N |
| SO | CDBS1045_S | CDBS1045S105 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 51207-31-9 | TCDF2378 | 2,3,7,8-TCDF | 0.585 | J | PG/G | 0.37 | 1.4 | Y |
| SO | CDBS1045_S | CDBS1045S105 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 72-54-8 | DDD44 | 4,4'-DDD | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S105 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 72-55-9 | DDE44 | 4,4'-DDE | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S105 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 50-29-3 | DDT44 | 4,4'-DDT | 3 | J | µg/kg | 1.2 | 1.2 | Y |
| SO | CDBS1045_S | CDBS1045S105 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 309-00-2 | ALDRIN | Aldrin | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S105 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 319-84-6 | BHCALPHA | Alpha-BHC | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S105 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 5103-71-9 | CHLORDANEA | Alpha-Chlordane | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S105 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-36-0 | SB | Antimony | 0.234 | J | mg/kg | 0.163 | 0.625 | Y |
| SO | CDBS1045_S | CDBS1045S105 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 12674-11-2 | PCB1016 | Aroclor 1016 | 12 | U | µg/kg | 12 | 12 | N |
| SO | CDBS1045_S | CDBS1045S105 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 11104-28-2 | PCB1221 | Aroclor 1221 | 12 | U | µg/kg | 12 | 12 | N |
| SO | CDBS1045_S | CDBS1045S105 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 11141-16-5 | PCB1232 | Aroclor 1232 | 12 | U | µg/kg | 12 | 12 | N |
| SO | CDBS1045_S | CDBS1045S105 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 53469-21-9 | PCB1242 | Aroclor 1242 | 12 | U | µg/kg | 12 | 12 | N |
| SO | CDBS1045_S | CDBS1045S105 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 12672-29-6 | PCB1248 | Aroclor 1248 | 12 | U | µg/kg | 12 | 12 | N |
| SO | CDBS1045_S | CDBS1045S105 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 11097-69-1 | PCB1254 | Aroclor 1254 | 12 | U | µg/kg | 12 | 12 | N |
| SO | CDBS1045_S | CDBS1045S105 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 11096-82-5 | PCB1260 | Aroclor 1260 | 12 | U | µg/kg | 12 | 12 | N |
| SO | CDBS1045_S | CDBS1045S105 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 37324-23-5 | PCB1262 | Aroclor 1262 | 12 | U | µg/kg | 12 | 12 | N |
| SO | CDBS1045_S | CDBS1045S105 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-38-2 | AS | Arsenic | 1.47 | = | mg/kg | 0.625 | 0.625 | Y |
| SO | CDBS1045_S | CDBS1045S105 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-39-3 | BA | Barium | 29.2 | = | mg/kg | 0.625 | 0.625 | Y |
| SO | CDBS1045_S | CDBS1045S105 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-41-7 | BE | Beryllium | 0.257 | U | mg/kg | 0.375 | 0.375 | N |
| SO | CDBS1045_S | CDBS1045S105 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 319-85-7 | BHCBETA | Beta-BHC | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S105 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-43-9 | CD | Cadmium | 0.15 | U | mg/kg | 0.25 | 0.25 | N |
| SO | CDBS1045_S | CDBS1045S105 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 57-74-9 | CHLORDANE | Chlordane | 12 | U | µg/kg | 12 | 12 | N |
| SO | CDBS1045_S | CDBS1045S105 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-47-3 | CR | Chromium | 7.75 | = | mg/kg | 1.25 | 1.25 | Y |
| SO | CDBS1045_S | CDBS1045S105 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-48-4 | CO | Cobalt | 2.46 | = | mg/kg | 0.625 | 0.625 | Y |
| SO | CDBS1045_S | CDBS1045S105 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-50-8 | CU | Copper | 3.87 | = | mg/kg | 0.25 | 0.25 | Y |
| SO | CDBS1045_S | CDBS1045S105 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 319-86-8 | BHCDELTA | Delta-BHC | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S105 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 60-57-1 | DIELDRIN | Dieldrin | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S105 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | M8015D | HC | EFHD (C12-C14) | 4786 | Diesel Range Organics (C12-C14) | 6300 | U | µg/kg | 6300 | 6300 | N |
| SO | CDBS1045_S | CDBS1045S105 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | M8015D | HC | EFHD (C15-C20) | EFHDC15C20 | Diesel Range Organics (C15-C20) | 6300 | U | µg/kg | 6300 | 6300 | N |
| SO | CDBS1045_S | CDBS1045S105 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | M8015D | HC | EFHD (C21-C30) | EFHDC21C30 | Diesel Range Organics (C21-C30) | 6300 | U | µg/kg | 6300 | 6300 | N |
| SO | CDBS1045_S | CDBS1045S105 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | M8015D | HC | EFHD (C8-C11) | EFHD (C8-C11) | Diesel Range Organics (C8-C11) | 6300 | U | µg/kg | 6300 | 6300 | N |
| SO | CDBS1045_S | CDBS1045S105 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 959-98-8 | ENDOSULFANA | Endosulfan I | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S105 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 33213-65-9 | ENDOSULFANB | Endosulfan II | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S105 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 1031-07-8 | ENDOSULFANS | Endosulfan Sulfate | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S105 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 72-20-8 | ENDRIN | Endrin | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S105 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 7421-93-4 | ENDRINALD | Endrin Aldehyde | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S105 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 53494-70-5 | ENDRINKET | Endrin ketone | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S105 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 58-89-9 | BHCGAMMA | gamma-BHC | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S105 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8015B | HC | GRO C4-C12 | 4541 | GRO (C4-C12) | 620 | U | µg/kg | 620 | 620 | N |
| SO | CDBS1045_S | CDBS1045S105 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 76-44-8 | HEPTACHLOR | Heptachlor | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S105 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 1024-57-3 | HEPT-EPOX | Heptachlor Epoxide | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S105 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7439-92-1 | PB | Lead | 13 | = | mg/kg | 0.5 | 0.5 | Y |
| SO | CDBS1045_S | CDBS1045S105 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW7471A | INO | 7439-97-6 | HG | Mercury | 0.00759 | U | mg/kg | 0.108 | 0.108 | N |

APPENDIX C-1

**Soil Washing Data**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| MATRIX | Station ID | Sample ID | Sample Type | Date Collected | Northing | Easting | Upper Depth | Lower Depth | Method | Parameter Class | CAS | Parameter ID | Parameter Name | Conc | Q | Unit | MDL | RL | Detected |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | CDBS1045_S | CDBS1045S105 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 72-43-5 | MTXYCL | Methoxychlor | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S105 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 2385-85-5 | MIREX | Mirex | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S105 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7439-98-7 | MO | Molybdenum | 0.226 | U | mg/kg | 0.125 | 0.125 | N |
| SO | CDBS1045_S | CDBS1045S105 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-02-0 | NI | Nickel | 4.08 | = | mg/kg | 0.5 | 0.5 | Y |
| SO | CDBS1045_S | CDBS1045S105 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 39001-02-0 | OCDF | Octachlorodibenzofuran | 34.9 | J | PG/G | 0.599 | 14 | Y |
| SO | CDBS1045_S | CDBS1045S105 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 3268-87-9 | OCDD | Octachlorodibenzo-p-dioxin | 1030 | J | PG/G | 2.18 | 14 | Y |
| SO | CDBS1045_S | CDBS1045S105 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | M8015D | HC | EFHD (C31-C40) | 4503 | ORO (C31-C40) | 6300 | U | µg/kg | 6300 | 6300 | N |
| SO | CDBS1045_S | CDBS1045S105 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 11100-14-4 | PCB1268 | PCB-1268 (Aroclor 1268) | 12 | U | µg/kg | 12 | 12 | N |
| SO | CDBS1045_S | CDBS1045S105 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7782-49-2 | SE | Selenium | 0.33 | U | mg/kg | 1.25 | 1.25 | N |
| SO | CDBS1045_S | CDBS1045S105 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-22-4 | AG | Silver | 0.178 | U | mg/kg | 0.25 | 0.25 | N |
| SO | CDBS1045_S | CDBS1045S105 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-28-0 | TL | Thallium | 0.131 | U | mg/kg | 0.25 | 0.25 | N |
| SO | CDBS1045_S | CDBS1045S105 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 37871-00-4 | HPCDD | Total HpCDD | 188 | J | PG/G | 0.955 | 7 | Y |
| SO | CDBS1045_S | CDBS1045S105 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 38998-75-3 | HPCDF | Total HpCDF | 37.1 | J | PG/G | 0.256 | 7 | Y |
| SO | CDBS1045_S | CDBS1045S105 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 34465-46-8 | HXCDD | Total HxCDD | 20.7 | J | PG/G | 0.37 | 7 | Y |
| SO | CDBS1045_S | CDBS1045S105 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 55684-94-1 | HXCDF | Total HxCDF | 22 | J | PG/G | 0.207 | 7 | Y |
| SO | CDBS1045_S | CDBS1045S105 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW9060 | GENCHEM | 1-01-2 | TOC | Total Organic Carbon | 2880 | J | mg/kg | 33.3 | 100 | Y |
| SO | CDBS1045_S | CDBS1045S105 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 36088-22-9 | PECDD | Total PeCDD | 1.49 | J | PG/G | 0.224 | 7 | Y |
| SO | CDBS1045_S | CDBS1045S105 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 30402-15-4 | PECDF | Total PeCDF | 11.1 | J | PG/G | 0.0747 | 7 | Y |
| SO | CDBS1045_S | CDBS1045S105 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | A2540B | GENCHEM | TSO | TSO | Total Solids | 80 | = | PERCENT | | | Y |
| SO | CDBS1045_S | CDBS1045S105 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 41903-57-5 | TCDD | Total TCDD | 0.132 | UJ | PG/G | 0.132 | 1.4 | N |
| SO | CDBS1045_S | CDBS1045S105 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 55722-27-5 | TCDF | Total TCDFs | 2.91 | J | PG/G | 0.258 | 1.4 | Y |
| SO | CDBS1045_S | CDBS1045S105 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 8001-35-2 | TOXAP | Toxaphene | 25 | U | µg/kg | 25 | 25 | N |
| SO | CDBS1045_S | CDBS1045S105 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-62-2 | V | Vanadium | 10.8 | = | mg/kg | 1.25 | 1.25 | Y |
| SO | CDBS1045_S | CDBS1045S105 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-66-6 | ZN | Zinc | 180 | J | mg/kg | 6.25 | 6.25 | Y |
| SO | CDBS1045_S | CDBS1045S106 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 35822-46-9 | HPCDD1234678 | 1,2,3,4,6,7,8-HpCDD | 50.8 | J | PG/G | 0.737 | 6.87 | Y |
| SO | CDBS1045_S | CDBS1045S106 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 67562-39-4 | HPCDF1234678 | 1,2,3,4,6,7,8-HpCDF | 9.08 | J | PG/G | 0.247 | 6.87 | Y |
| SO | CDBS1045_S | CDBS1045S106 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 55673-89-7 | HPCDF1234789 | 1,2,3,4,7,8,9-HpCDF | 0.778 | J | PG/G | 0.346 | 6.87 | Y |
| SO | CDBS1045_S | CDBS1045S106 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 39227-28-6 | HXCDD123478 | 1,2,3,4,7,8-HxCDD | 0.685 | J | PG/G | 0.399 | 6.87 | Y |
| SO | CDBS1045_S | CDBS1045S106 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 70648-26-9 | HXCDF123478 | 1,2,3,4,7,8-HxCDF | 0.773 | J | PG/G | 0.207 | 6.87 | Y |
| SO | CDBS1045_S | CDBS1045S106 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 57653-85-7 | HXCDD123678 | 1,2,3,6,7,8-HxCDD | 3.35 | J | PG/G | 0.333 | 6.87 | Y |
| SO | CDBS1045_S | CDBS1045S106 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 57117-44-9 | HXCDF123678 | 1,2,3,6,7,8-HxCDF | 0.511 | UJ | PG/G | 0.175 | 6.87 | N |
| SO | CDBS1045_S | CDBS1045S106 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 19408-74-3 | HXCDD123789 | 1,2,3,7,8,9-HxCDD | 1.3 | J | PG/G | 0.385 | 6.87 | Y |
| SO | CDBS1045_S | CDBS1045S106 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 72918-21-9 | HXCDF123789 | 1,2,3,7,8,9-HxCDF | 0.272 | UJ | PG/G | 0.239 | 6.87 | N |
| SO | CDBS1045_S | CDBS1045S106 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 40321-76-4 | PECDD12378 | 1,2,3,7,8-PeCDD | 0.305 | U | PG/G | 0.159 | 6.87 | N |
| SO | CDBS1045_S | CDBS1045S106 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 57117-41-6 | PECDF12378 | 1,2,3,7,8-PeCDF | 0.195 | UJ | PG/G | 0.195 | 6.87 | N |
| SO | CDBS1045_S | CDBS1045S106 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 60851-34-5 | HXCDF234678 | 2,3,4,6,7,8-HxCDF | 0.674 | J | PG/G | 0.194 | 6.87 | Y |
| SO | CDBS1045_S | CDBS1045S106 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 57117-31-4 | PECDF23478 | 2,3,4,7,8-PeCDF | 0.489 | J | PG/G | 0.194 | 6.87 | Y |
| SO | CDBS1045_S | CDBS1045S106 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 1746-01-6 | TCDD2378 | 2,3,7,8-TCDD | 0.125 | UJ | PG/G | 0.125 | 1.37 | N |
| SO | CDBS1045_S | CDBS1045S106 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 51207-31-9 | TCDF2378 | 2,3,7,8-TCDF | 0.874 | J | PG/G | 0.338 | 1.37 | Y |
| SO | CDBS1045_S | CDBS1045S106 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 72-54-8 | DDD44 | 4,4'-DDD | 0.82 | J | µg/kg | 0.43 | 1.4 | Y |
| SO | CDBS1045_S | CDBS1045S106 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 72-55-9 | DDE44 | 4,4'-DDE | 1.4 | U | µg/kg | 1.4 | 1.4 | N |
| SO | CDBS1045_S | CDBS1045S106 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 50-29-3 | DDT44 | 4,4'-DDT | 3.7 | = | µg/kg | 1.4 | 1.4 | Y |
| SO | CDBS1045_S | CDBS1045S106 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 309-00-2 | ALDRIN | Aldrin | 1.4 | U | µg/kg | 1.4 | 1.4 | N |
| SO | CDBS1045_S | CDBS1045S106 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 319-84-6 | BHCALPHA | Alpha-BHC | 1.4 | U | µg/kg | 1.4 | 1.4 | N |
| SO | CDBS1045_S | CDBS1045S106 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 5103-71-9 | CHLORDANEA | Alpha-Chlordane | 1.4 | U | µg/kg | 1.4 | 1.4 | N |
| SO | CDBS1045_S | CDBS1045S106 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-36-0 | SB | Antimony | 0.349 | J | mg/kg | 0.178 | 0.684 | Y |
| SO | CDBS1045_S | CDBS1045S106 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 12674-11-2 | PCB1016 | Aroclor 1016 | 14 | U | µg/kg | 14 | 14 | N |
| SO | CDBS1045_S | CDBS1045S106 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 11104-28-2 | PCB1221 | Aroclor 1221 | 14 | U | µg/kg | 14 | 14 | N |
| SO | CDBS1045_S | CDBS1045S106 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 11141-16-5 | PCB1232 | Aroclor 1232 | 14 | U | µg/kg | 14 | 14 | N |
| SO | CDBS1045_S | CDBS1045S106 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 53469-21-9 | PCB1242 | Aroclor 1242 | 14 | U | µg/kg | 14 | 14 | N |
| SO | CDBS1045_S | CDBS1045S106 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 12672-29-6 | PCB1248 | Aroclor 1248 | 14 | U | µg/kg | 14 | 14 | N |
| SO | CDBS1045_S | CDBS1045S106 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 11097-69-1 | PCB1254 | Aroclor 1254 | 14 | U | µg/kg | 14 | 14 | N |
| SO | CDBS1045_S | CDBS1045S106 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 11096-82-5 | PCB1260 | Aroclor 1260 | 14 | U | µg/kg | 14 | 14 | N |
| SO | CDBS1045_S | CDBS1045S106 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 37324-23-5 | PCB1262 | Aroclor 1262 | 14 | U | µg/kg | 14 | 14 | N |
| SO | CDBS1045_S | CDBS1045S106 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-38-2 | AS | Arsenic | 8.83 | = | mg/kg | 0.684 | 0.684 | Y |
| SO | CDBS1045_S | CDBS1045S106 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-39-3 | BA | Barium | 141 | = | mg/kg | 0.684 | 0.684 | Y |
| SO | CDBS1045_S | CDBS1045S106 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-41-7 | BE | Beryllium | 1.35 | = | mg/kg | 0.41 | 0.41 | Y |
| SO | CDBS1045_S | CDBS1045S106 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 319-85-7 | BHCBETA | Beta-BHC | 1.4 | U | µg/kg | 1.4 | 1.4 | N |
| SO | CDBS1045_S | CDBS1045S106 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-43-9 | CD | Cadmium | 1.03 | = | mg/kg | 0.274 | 0.274 | Y |
| SO | CDBS1045_S | CDBS1045S106 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 57-74-9 | CHLORDANE | Chlordane | 14 | U | µg/kg | 14 | 14 | N |
| SO | CDBS1045_S | CDBS1045S106 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-47-3 | CR | Chromium | 35.7 | = | mg/kg | 1.37 | 1.37 | Y |
| SO | CDBS1045_S | CDBS1045S106 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-48-4 | CO | Cobalt | 8.79 | = | mg/kg | 0.684 | 0.684 | Y |
| SO | CDBS1045_S | CDBS1045S106 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-50-8 | CU | Copper | 26.1 | = | mg/kg | 0.274 | 0.274 | Y |
| SO | CDBS1045_S | CDBS1045S106 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 319-86-8 | BHCDELTA | Delta-BHC | 1.4 | U | µg/kg | 1.4 | 1.4 | N |
| SO | CDBS1045_S | CDBS1045S106 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 60-57-1 | DIELDRIN | Dieldrin | 1.4 | U | µg/kg | 1.4 | 1.4 | N |
| SO | CDBS1045_S | CDBS1045S106 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | M8015D | HC | EFHD (C12-C14) | 4786 | Diesel Range Organics (C12-C14) | 6900 | U | µg/kg | 6900 | 6900 | N |
| SO | CDBS1045_S | CDBS1045S106 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | M8015D | HC | EFHD (C15-C20) | EFHDC15C20 | Diesel Range Organics (C15-C20) | 6900 | U | µg/kg | 6900 | 6900 | N |
| SO | CDBS1045_S | CDBS1045S106 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | M8015D | HC | EFHD (C21-C30) | EFHDC21C30 | Diesel Range Organics (C21-C30) | 6900 | U | µg/kg | 6900 | 6900 | N |
| SO | CDBS1045_S | CDBS1045S106 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | M8015D | HC | EFHD (C8-C11) | EFHD (C8-C11) | Diesel Range Organics (C8-C11) | 6900 | U | µg/kg | 6900 | 6900 | N |

APPENDIX C-1

**Soil Washing Data**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| MATRIX | Station ID | Sample ID | Sample Type | Date Collected | Northing | Easting | Upper Depth | Lower Depth | Method | Parameter Class | CAS | Parameter ID | Parameter Name | Conc | Q | Unit | MDL | RL | Detected |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | CDBS1045_S | CDBS1045S106 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 959-98-8 | ENDOSULFANA | Endosulfan I | 1.4 | U | µg/kg | 1.4 | 1.4 | N |
| SO | CDBS1045_S | CDBS1045S106 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 33213-65-9 | ENDOSULFANB | Endosulfan II | 1.4 | U | µg/kg | 1.4 | 1.4 | N |
| SO | CDBS1045_S | CDBS1045S106 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 1031-07-8 | ENDOSULFANS | Endosulfan Sulfate | 1.4 | U | µg/kg | 1.4 | 1.4 | N |
| SO | CDBS1045_S | CDBS1045S106 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 72-20-8 | ENDRIN | Endrin | 1.4 | U | µg/kg | 1.4 | 1.4 | N |
| SO | CDBS1045_S | CDBS1045S106 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 7421-93-4 | ENDRINALD | Endrin Aldehyde | 1.4 | U | µg/kg | 1.4 | 1.4 | N |
| SO | CDBS1045_S | CDBS1045S106 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 53494-70-5 | ENDRINKET | Endrin ketone | 1.4 | U | µg/kg | 1.4 | 1.4 | N |
| SO | CDBS1045_S | CDBS1045S106 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 58-89-9 | BHCGAMMA | gamma-BHC | 1.4 | U | µg/kg | 1.4 | 1.4 | N |
| SO | CDBS1045_S | CDBS1045S106 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8015B | HC | GRO C4-C12 | 4541 | GRO (C4-C12) | 680 | U | µg/kg | 680 | 680 | N |
| SO | CDBS1045_S | CDBS1045S106 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 76-44-8 | HEPTACHLOR | Heptachlor | 1.4 | U | µg/kg | 680 | 1.4 | N |
| SO | CDBS1045_S | CDBS1045S106 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 1024-57-3 | HEPT-EPOX | Heptachlor Epoxide | 1.4 | U | µg/kg | 1.4 | 1.4 | N |
| SO | CDBS1045_S | CDBS1045S106 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7439-92-1 | PB | Lead | 51.3 | = | mg/kg | 0.547 | 0.547 | Y |
| SO | CDBS1045_S | CDBS1045S106 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW7471A | INO | 7439-97-6 | HG | Mercury | 0.0685 | J | mg/kg | 0.00777 | 0.11 | Y |
| SO | CDBS1045_S | CDBS1045S106 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 72-43-5 | MTXYCL | Methoxychlor | 1.4 | U | µg/kg | 1.4 | 1.4 | N |
| SO | CDBS1045_S | CDBS1045S106 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 2385-85-5 | MIREX | Mirex | 1.4 | U | µg/kg | 1.4 | 1.4 | N |
| SO | CDBS1045_S | CDBS1045S106 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7439-98-7 | MO | Molybdenum | 1.77 | = | mg/kg | 0.137 | 0.137 | Y |
| SO | CDBS1045_S | CDBS1045S106 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-02-0 | NI | Nickel | 21.8 | = | mg/kg | 0.547 | 0.547 | Y |
| SO | CDBS1045_S | CDBS1045S106 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 39001-02-0 | OCDF | Octachlorodibenzofuran | 28.5 | J | PG/G | 0.566 | 13.7 | Y |
| SO | CDBS1045_S | CDBS1045S106 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 3268-87-9 | OCDD | Octachlorodibenzo-p-dioxin | 934 | J | PG/G | 1.86 | 13.7 | Y |
| SO | CDBS1045_S | CDBS1045S106 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | M8015D | HC | EFHD (C31-C40) | 4503 | ORO (C31-C40) | 6900 | U | µg/kg | 6900 | 6900 | N |
| SO | CDBS1045_S | CDBS1045S106 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 11100-14-4 | PCB1268 | PCB-1268 (Aroclor 1268) | 14 | U | µg/kg | 14 | 14 | N |
| SO | CDBS1045_S | CDBS1045S106 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7782-49-2 | SE | Selenium | 0.562 | J | mg/kg | 0.361 | 1.37 | Y |
| SO | CDBS1045_S | CDBS1045S106 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-22-4 | AG | Silver | 1.35 | = | mg/kg | 0.274 | 0.274 | Y |
| SO | CDBS1045_S | CDBS1045S106 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-28-0 | TL | Thallium | 0.408 | = | mg/kg | 0.274 | 0.274 | Y |
| SO | CDBS1045_S | CDBS1045S106 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 37871-00-4 | HPCDD | Total HpCDD | 152 | J | PG/G | 0.737 | 6.87 | Y |
| SO | CDBS1045_S | CDBS1045S106 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 38998-75-3 | HPCDF | Total HpCDF | 28.3 | J | PG/G | 0.247 | 6.87 | Y |
| SO | CDBS1045_S | CDBS1045S106 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 34465-46-8 | HXCDD | Total HxCDD | 16.9 | J | PG/G | 0.333 | 6.87 | Y |
| SO | CDBS1045_S | CDBS1045S106 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 55684-94-1 | HXCDF | Total HxCDF | 15 | J | PG/G | 0.175 | 6.87 | Y |
| SO | CDBS1045_S | CDBS1045S106 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW9060 | GENCHEM | 1-01-2 | TOC | Total Organic Carbon | 13300 | J | mg/kg | 33.3 | 100 | Y |
| SO | CDBS1045_S | CDBS1045S106 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 36088-22-9 | PECDD | Total PeCDD | 1.65 | J | PG/G | 0.159 | 6.87 | Y |
| SO | CDBS1045_S | CDBS1045S106 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 30402-15-4 | PECDF | Total PeCDF | 6.58 | J | PG/G | 0.0676 | 6.87 | Y |
| SO | CDBS1045_S | CDBS1045S106 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | A2540B | GENCHEM | TSO | TSO | Total Solids | 73.1 | = | PERCENT | | | Y |
| SO | CDBS1045_S | CDBS1045S106 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 41903-57-5 | TCDD | Total TCDD | 0.125 | UJ | PG/G | 0.125 | 1.37 | N |
| SO | CDBS1045_S | CDBS1045S106 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 55722-27-5 | TCDF | Total TCDFs | 3.99 | J | PG/G | 0.191 | 1.37 | Y |
| SO | CDBS1045_S | CDBS1045S106 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 8001-35-2 | TOXAP | Toxaphene | 27 | U | µg/kg | 27 | 27 | N |
| SO | CDBS1045_S | CDBS1045S106 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-62-2 | V | Vanadium | 51 | = | mg/kg | 1.37 | 1.37 | Y |
| SO | CDBS1045_S | CDBS1045S106 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-66-6 | ZN | Zinc | 161 | = | mg/kg | 6.84 | 6.84 | Y |
| SO | CDBS1045_S | CDBS1045S108 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-36-0 | SB | Antimony | 0.143 | U | mg/kg | 0.548 | 0.548 | N |
| SO | CDBS1045_S | CDBS1045S108 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 12674-11-2 | PCB1016 | Aroclor 1016 | 22 | U | µg/kg | 22 | 22 | N |
| SO | CDBS1045_S | CDBS1045S108 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 11104-28-2 | PCB1221 | Aroclor 1221 | 22 | U | µg/kg | 22 | 22 | N |
| SO | CDBS1045_S | CDBS1045S108 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 11141-16-5 | PCB1232 | Aroclor 1232 | 22 | U | µg/kg | 22 | 22 | N |
| SO | CDBS1045_S | CDBS1045S108 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 53469-21-9 | PCB1242 | Aroclor 1242 | 22 | U | µg/kg | 22 | 22 | N |
| SO | CDBS1045_S | CDBS1045S108 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 12672-29-6 | PCB1248 | Aroclor 1248 | 22 | U | µg/kg | 22 | 22 | N |
| SO | CDBS1045_S | CDBS1045S108 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 11097-69-1 | PCB1254 | Aroclor 1254 | 22 | U | µg/kg | 22 | 22 | N |
| SO | CDBS1045_S | CDBS1045S108 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 11096-82-5 | PCB1260 | Aroclor 1260 | 22 | U | µg/kg | 22 | 22 | N |
| SO | CDBS1045_S | CDBS1045S108 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 37324-23-5 | PCB1262 | Aroclor 1262 | 22 | U | µg/kg | 22 | 22 | N |
| SO | CDBS1045_S | CDBS1045S108 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-38-2 | AS | Arsenic | 3.63 | = | mg/kg | 0.548 | 0.548 | Y |
| SO | CDBS1045_S | CDBS1045S108 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-39-3 | BA | Barium | 54.1 | = | mg/kg | 0.548 | 0.548 | Y |
| SO | CDBS1045_S | CDBS1045S108 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-41-7 | BE | Beryllium | 0.407 | = | mg/kg | 0.329 | 0.329 | Y |
| SO | CDBS1045_S | CDBS1045S108 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-43-9 | CD | Cadmium | 0.275 | = | mg/kg | 0.219 | 0.219 | Y |
| SO | CDBS1045_S | CDBS1045S108 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-47-3 | CR | Chromium | 15.4 | = | mg/kg | 1.1 | 1.1 | Y |
| SO | CDBS1045_S | CDBS1045S108 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-48-4 | CO | Cobalt | 6.54 | = | mg/kg | 0.548 | 0.548 | Y |
| SO | CDBS1045_S | CDBS1045S108 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-50-8 | CU | Copper | 7.35 | = | mg/kg | 0.219 | 0.219 | Y |
| SO | CDBS1045_S | CDBS1045S108 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | M8015D | HC | EFHD (C12-C14) | 4786 | Diesel Range Organics (C12-C14) | 5500 | U | µg/kg | 5500 | 5500 | N |
| SO | CDBS1045_S | CDBS1045S108 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | M8015D | HC | EFHD (C15-C20) | EFHDC15C20 | Diesel Range Organics (C15-C20) | 5500 | U | µg/kg | 5500 | 5500 | N |
| SO | CDBS1045_S | CDBS1045S108 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | M8015D | HC | EFHD (C21-C30) | EFHDC21C30 | Diesel Range Organics (C21-C30) | 15000 | = | µg/kg | 5500 | 5500 | Y |
| SO | CDBS1045_S | CDBS1045S108 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | M8015D | HC | EFHD (C8-C11) | EFHD (C8-C11) | Diesel Range Organics (C8-C11) | 5500 | U | µg/kg | 5500 | 5500 | N |
| SO | CDBS1045_S | CDBS1045S108 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8015B | HC | GRO C4-C12 | 4541 | GRO (C4-C12) | 540 | U | µg/kg | 540 | 540 | N |
| SO | CDBS1045_S | CDBS1045S108 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7439-92-1 | PB | Lead | 12 | = | mg/kg | 0.438 | 0.438 | Y |
| SO | CDBS1045_S | CDBS1045S108 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW7471A | INO | 7439-97-6 | HG | Mercury | 0.00633 | U | mg/kg | 0.0898 | 0.0898 | N |
| SO | CDBS1045_S | CDBS1045S108 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7439-98-7 | MO | Molybdenum | 0.528 | = | mg/kg | 0.11 | 0.11 | Y |
| SO | CDBS1045_S | CDBS1045S108 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-02-0 | NI | Nickel | 8.97 | = | mg/kg | 0.438 | 0.438 | Y |
| SO | CDBS1045_S | CDBS1045S108 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | M8015D | HC | EFHD (C31-C40) | 4503 | ORO (C31-C40) | 50000 | = | µg/kg | 5500 | 5500 | Y |
| SO | CDBS1045_S | CDBS1045S108 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 11100-14-4 | PCB1268 | PCB-1268 (Aroclor 1268) | 22 | U | µg/kg | 22 | 22 | N |
| SO | CDBS1045_S | CDBS1045S108 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7782-49-2 | SE | Selenium | 0.289 | U | mg/kg | 1.1 | 1.1 | N |
| SO | CDBS1045_S | CDBS1045S108 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-22-4 | AG | Silver | 0.156 | U | mg/kg | 0.219 | 0.219 | N |
| SO | CDBS1045_S | CDBS1045S108 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-28-0 | TL | Thallium | 0.157 | J | mg/kg | 0.115 | 0.219 | Y |
| SO | CDBS1045_S | CDBS1045S108 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | A2540B | GENCHEM | TSO | TSO | Total Solids | 91.3 | = | PERCENT | | | Y |
| SO | CDBS1045_S | CDBS1045S108 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-62-2 | V | Vanadium | 21.4 | = | mg/kg | 1.1 | 1.1 | Y |
| SO | CDBS1045_S | CDBS1045S108 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-66-6 | ZN | Zinc | 42 | = | mg/kg | 5.48 | 5.48 | Y |

APPENDIX C-1

**Soil Washing Data**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| MATRIX | Station ID | Sample ID | Sample Type | Date Collected | Northing | Easting | Upper Depth | Lower Depth | Method | Parameter Class | CAS | Parameter ID | Parameter Name | Conc | Q | Unit | MDL | RL | Detected |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | CDBS1045_S | CDBS1045S109 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 35822-46-9 | HPCDD1234678 | 1,2,3,4,6,7,8-HpCDD | 278 | J | PG/G | 1.89 | 4.92 | Y |
| SO | CDBS1045_S | CDBS1045S109 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 67562-39-4 | HPCDF1234678 | 1,2,3,4,6,7,8-HpCDF | 49.2 | J | PG/G | 0.413 | 4.92 | Y |
| SO | CDBS1045_S | CDBS1045S109 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 55673-89-7 | HPCDF1234789 | 1,2,3,4,7,8,9-HpCDF | 4.06 | J | PG/G | 0.582 | 4.92 | Y |
| SO | CDBS1045_S | CDBS1045S109 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 39227-28-6 | HXCDD123478 | 1,2,3,4,7,8-HxCDD | 2.99 | J | PG/G | 0.533 | 4.92 | Y |
| SO | CDBS1045_S | CDBS1045S109 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 70648-26-9 | HXCDF123478 | 1,2,3,4,7,8-HxCDF | 3.85 | J | PG/G | 0.299 | 4.92 | Y |
| SO | CDBS1045_S | CDBS1045S109 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 57653-85-7 | HXCDD123678 | 1,2,3,6,7,8-HxCDD | 16.7 | J | PG/G | 0.447 | 4.92 | Y |
| SO | CDBS1045_S | CDBS1045S109 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 57117-44-9 | HXCDF123678 | 1,2,3,6,7,8-HxCDF | 2.64 | J | PG/G | 0.254 | 4.92 | Y |
| SO | CDBS1045_S | CDBS1045S109 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 19408-74-3 | HXCDD123789 | 1,2,3,7,8,9-HxCDD | 6.86 | J | PG/G | 0.515 | 4.92 | Y |
| SO | CDBS1045_S | CDBS1045S109 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 72918-21-9 | HXCDF123789 | 1,2,3,7,8,9-HxCDF | 1.41 | J | PG/G | 0.346 | 4.92 | Y |
| SO | CDBS1045_S | CDBS1045S109 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 40321-76-4 | PECDD12378 | 1,2,3,7,8-PeCDD | 1.38 | J | PG/G | 0.187 | 4.92 | Y |
| SO | CDBS1045_S | CDBS1045S109 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 57117-41-6 | PECDF12378 | 1,2,3,7,8-PeCDF | 0.907 | J | PG/G | 0.218 | 4.92 | Y |
| SO | CDBS1045_S | CDBS1045S109 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 60851-34-5 | HXCDF234678 | 2,3,4,6,7,8-HxCDF | 3.14 | J | PG/G | 0.281 | 4.92 | Y |
| SO | CDBS1045_S | CDBS1045S109 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 57117-31-4 | PECDF23478 | 2,3,4,7,8-PeCDF | 2.78 | J | PG/G | 0.216 | 4.92 | Y |
| SO | CDBS1045_S | CDBS1045S109 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 1746-01-6 | TCDD2378 | 2,3,7,8-TCDD | 0.144 | UJ | PG/G | 0.144 | 0.984 | N |
| SO | CDBS1045_S | CDBS1045S109 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 51207-31-9 | TCDF2378 | 2,3,7,8-TCDF | 1.22 | J | PG/G | 0.59 | 0.984 | Y |
| SO | CDBS1045_S | CDBS1045S109 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 72-54-8 | DDD44 | 4,4'-DDD | 1.1 | U | µg/kg | 1.1 | 1.1 | N |
| SO | CDBS1045_S | CDBS1045S109 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 72-55-9 | DDE44 | 4,4'-DDE | 1.1 | U | µg/kg | 1.1 | 1.1 | N |
| SO | CDBS1045_S | CDBS1045S109 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 50-29-3 | DDT44 | 4,4'-DDT | 1.1 | U | µg/kg | 1.1 | 1.1 | N |
| SO | CDBS1045_S | CDBS1045S109 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 309-00-2 | ALDRIN | Aldrin | 1.1 | U | µg/kg | 1.1 | 1.1 | N |
| SO | CDBS1045_S | CDBS1045S109 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 319-84-6 | BHCALPHA | Alpha-BHC | 1.1 | U | µg/kg | 1.1 | 1.1 | N |
| SO | CDBS1045_S | CDBS1045S109 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 5103-71-9 | CHLORDANEA | Alpha-Chlordane | 1.1 | U | µg/kg | 1.1 | 1.1 | N |
| SO | CDBS1045_S | CDBS1045S109 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-36-0 | SB | Antimony | 0.211 | J | mg/kg | 0.138 | 0.53 | Y |
| SO | CDBS1045_S | CDBS1045S109 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 12674-11-2 | PCB1016 | Aroclor 1016 | 11 | U | µg/kg | 11 | 11 | N |
| SO | CDBS1045_S | CDBS1045S109 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 11104-28-2 | PCB1221 | Aroclor 1221 | 11 | U | µg/kg | 11 | 11 | N |
| SO | CDBS1045_S | CDBS1045S109 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 11141-16-5 | PCB1232 | Aroclor 1232 | 11 | U | µg/kg | 11 | 11 | N |
| SO | CDBS1045_S | CDBS1045S109 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 53469-21-9 | PCB1242 | Aroclor 1242 | 11 | U | µg/kg | 11 | 11 | N |
| SO | CDBS1045_S | CDBS1045S109 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 12672-29-6 | PCB1248 | Aroclor 1248 | 11 | U | µg/kg | 11 | 11 | N |
| SO | CDBS1045_S | CDBS1045S109 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 11097-69-1 | PCB1254 | Aroclor 1254 | 11 | U | µg/kg | 11 | 11 | N |
| SO | CDBS1045_S | CDBS1045S109 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 11096-82-5 | PCB1260 | Aroclor 1260 | 11 | U | µg/kg | 11 | 11 | N |
| SO | CDBS1045_S | CDBS1045S109 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 37324-23-5 | PCB1262 | Aroclor 1262 | 11 | U | µg/kg | 11 | 11 | N |
| SO | CDBS1045_S | CDBS1045S109 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-38-2 | AS | Arsenic | 3.65 | = | mg/kg | 0.53 | 0.53 | Y |
| SO | CDBS1045_S | CDBS1045S109 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-39-3 | BA | Barium | 78.2 | = | mg/kg | 0.53 | 0.53 | Y |
| SO | CDBS1045_S | CDBS1045S109 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-41-7 | BE | Beryllium | 0.607 | = | mg/kg | 0.318 | 0.318 | Y |
| SO | CDBS1045_S | CDBS1045S109 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 319-85-7 | BHCBETA | Beta-BHC | 1.1 | U | µg/kg | 1.1 | 1.1 | N |
| SO | CDBS1045_S | CDBS1045S109 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-43-9 | CD | Cadmium | 0.542 | = | mg/kg | 0.212 | 0.212 | Y |
| SO | CDBS1045_S | CDBS1045S109 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 57-74-9 | CHLORDANE | Chlordane | 11 | U | µg/kg | 11 | 11 | N |
| SO | CDBS1045_S | CDBS1045S109 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-47-3 | CR | Chromium | 16.8 | = | mg/kg | 1.06 | 1.06 | Y |
| SO | CDBS1045_S | CDBS1045S109 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-48-4 | CO | Cobalt | 5.42 | = | mg/kg | 0.53 | 0.53 | Y |
| SO | CDBS1045_S | CDBS1045S109 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-50-8 | CU | Copper | 16.2 | = | mg/kg | 0.212 | 0.212 | Y |
| SO | CDBS1045_S | CDBS1045S109 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 319-86-8 | BHCDELTA | Delta-BHC | 1.1 | U | µg/kg | 1.1 | 1.1 | N |
| SO | CDBS1045_S | CDBS1045S109 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 60-57-1 | DIELDRIN | Dieldrin | 1.1 | U | µg/kg | 1.1 | 1.1 | N |
| SO | CDBS1045_S | CDBS1045S109 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | M8015D | HC | EFHD (C12-C14) | 4786 | Diesel Range Organics (C12-C14) | 5200 | U | µg/kg | 5200 | 5200 | N |
| SO | CDBS1045_S | CDBS1045S109 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | M8015D | HC | EFHD (C15-C20) | EFHDC15C20 | Diesel Range Organics (C15-C20) | 5200 | U | µg/kg | 5200 | 5200 | N |
| SO | CDBS1045_S | CDBS1045S109 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | M8015D | HC | EFHD (C21-C30) | EFHDC21C30 | Diesel Range Organics (C21-C30) | 25000 | = | µg/kg | 5200 | 5200 | Y |
| SO | CDBS1045_S | CDBS1045S109 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | M8015D | HC | EFHD (C8-C11) | EFHD (C8-C11) | Diesel Range Organics (C8-C11) | 5200 | U | µg/kg | 5200 | 5200 | N |
| SO | CDBS1045_S | CDBS1045S109 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 959-98-8 | ENDOSULFANA | Endosulfan I | 1.1 | U | µg/kg | 1.1 | 1.1 | N |
| SO | CDBS1045_S | CDBS1045S109 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 33213-65-9 | ENDOSULFANB | Endosulfan II | 1.1 | U | µg/kg | 1.1 | 1.1 | N |
| SO | CDBS1045_S | CDBS1045S109 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 1031-07-8 | ENDOSULFANS | Endosulfan Sulfate | 1.1 | U | µg/kg | 1.1 | 1.1 | N |
| SO | CDBS1045_S | CDBS1045S109 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 72-20-8 | ENDRIN | Endrin | 1.1 | U | µg/kg | 1.1 | 1.1 | N |
| SO | CDBS1045_S | CDBS1045S109 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 7421-93-4 | ENDRINALD | Endrin Aldehyde | 1.1 | U | µg/kg | 1.1 | 1.1 | N |
| SO | CDBS1045_S | CDBS1045S109 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 53494-70-5 | ENDRINKET | Endrin ketone | 1.1 | U | µg/kg | 1.1 | 1.1 | N |
| SO | CDBS1045_S | CDBS1045S109 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 58-89-9 | BHCGAMMA | gamma-BHC | 1.1 | U | µg/kg | 1.1 | 1.1 | N |
| SO | CDBS1045_S | CDBS1045S109 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8015B | HC | GRO C4-C12 | 4541 | GRO (C4-C12) | 510 | U | µg/kg | 510 | 510 | N |
| SO | CDBS1045_S | CDBS1045S109 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 76-44-8 | HEPTACHLOR | Heptachlor | 1.1 | U | µg/kg | 1.1 | 1.1 | N |
| SO | CDBS1045_S | CDBS1045S109 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 1024-57-3 | HEPT-EPOX | Heptachlor Epoxide | 1.1 | U | µg/kg | 1.1 | 1.1 | N |
| SO | CDBS1045_S | CDBS1045S109 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7439-92-1 | PB | Lead | 26.4 | = | mg/kg | 0.424 | 0.424 | Y |
| SO | CDBS1045_S | CDBS1045S109 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW7471A | INO | 7439-97-6 | HG | Mercury | 0.0144 | J | mg/kg | 0.00623 | 0.0884 | Y |
| SO | CDBS1045_S | CDBS1045S109 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 72-43-5 | MTXYCL | Methoxychlor | 1.1 | U | µg/kg | 1.1 | 1.1 | N |
| SO | CDBS1045_S | CDBS1045S109 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 2385-85-5 | MIREX | Mirex | 1.1 | U | µg/kg | 1.1 | 1.1 | N |
| SO | CDBS1045_S | CDBS1045S109 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7439-98-7 | MO | Molybdenum | 0.85 | = | mg/kg | 0.106 | 0.106 | Y |
| SO | CDBS1045_S | CDBS1045S109 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-02-0 | NI | Nickel | 10.4 | = | mg/kg | 0.424 | 0.424 | Y |
| SO | CDBS1045_S | CDBS1045S109 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 39001-02-0 | OCDF | Octachlorodibenzofuran | 143 | J | PG/G | 0.724 | 9.84 | Y |
| SO | CDBS1045_S | CDBS1045S109 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 3268-87-9 | OCDD | Octachlorodibenzo-p-dioxin | 4970 | J | PG/G | 2.73 | 9.84 | Y |
| SO | CDBS1045_S | CDBS1045S109 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | M8015D | HC | EFHD (C31-C40) | 4503 | ORO (C31-C40) | 45000 | = | µg/kg | 5200 | 5200 | Y |
| SO | CDBS1045_S | CDBS1045S109 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 11100-14-4 | PCB1268 | PCB-1268 (Aroclor 1268) | 11 | U | µg/kg | 11 | 11 | N |
| SO | CDBS1045_S | CDBS1045S109 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7782-49-2 | SE | Selenium | 0.28 | U | mg/kg | 1.06 | 1.06 | N |
| SO | CDBS1045_S | CDBS1045S109 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-22-4 | AG | Silver | 0.612 | = | mg/kg | 0.212 | 0.212 | Y |
| SO | CDBS1045_S | CDBS1045S109 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-28-0 | TL | Thallium | 0.215 | = | mg/kg | 0.212 | 0.212 | Y |
| SO | CDBS1045_S | CDBS1045S109 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 37871-00-4 | HPCDD | Total HpCDD | 822 | J | PG/G | 1.89 | 4.92 | Y |

APPENDIX C-1

**Soil Washing Data**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| MATRIX | Station ID | Sample ID | Sample Type | Date Collected | Northing | Easting | Upper Depth | Lower Depth | Method | Parameter Class | CAS | Parameter ID | Parameter Name | Conc | Q | Unit | MDL | RL | Detected |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | CDBS1045_S | CDBS1045S109 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 38998-75-3 | HPCDF | Total HpCDF | 156 | J | PG/G | 0.413 | 4.92 | Y |
| SO | CDBS1045_S | CDBS1045S109 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 34465-46-8 | HXCDD | Total HxCDD | 93 | J | PG/G | 0.447 | 4.92 | Y |
| SO | CDBS1045_S | CDBS1045S109 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 55684-94-1 | HXCDF | Total HxCDF | 85.5 | J | PG/G | 0.254 | 4.92 | Y |
| SO | CDBS1045_S | CDBS1045S109 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW9060 | GENCHEM | 1-01-2 | TOC | Total Organic Carbon | 5170 | J | mg/kg | 33.3 | 100 | Y |
| SO | CDBS1045_S | CDBS1045S109 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 36088-22-9 | PECDD | Total PeCDD | 9.51 | J | PG/G | 0.187 | 4.92 | Y |
| SO | CDBS1045_S | CDBS1045S109 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 30402-15-4 | PECDF | Total PeCDF | 40.1 | J | PG/G | 0.0803 | 4.92 | Y |
| SO | CDBS1045_S | CDBS1045S109 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | A2540B | GENCHEM | TSO | TSO | Total Solids | 94.3 | = | PERCENT | | | Y |
| SO | CDBS1045_S | CDBS1045S109 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 41903-57-5 | TCDD | Total TCDD | 1.21 | J | PG/G | 0.144 | 0.984 | Y |
| SO | CDBS1045_S | CDBS1045S109 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 55722-27-5 | TCDF | Total TCDFs | 17.5 | J | PG/G | 0.372 | 0.984 | Y |
| SO | CDBS1045_S | CDBS1045S109 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 8001-35-2 | TOXAP | Toxaphene | 21 | U | µg/kg | 21 | 21 | N |
| SO | CDBS1045_S | CDBS1045S109 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-62-2 | V | Vanadium | 27.4 | = | mg/kg | 1.06 | 1.06 | Y |
| SO | CDBS1045_S | CDBS1045S109 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-66-6 | ZN | Zinc | 80.6 | = | mg/kg | 5.3 | 5.3 | Y |
| SO | CDBS1045_S | CDBS1045S111 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 35822-46-9 | HPCDD1234678 | 1,2,3,4,6,7,8-HpCDD | 81 | J | PG/G | 2.52 | 5.95 | Y |
| SO | CDBS1045_S | CDBS1045S111 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 67562-39-4 | HPCDF1234678 | 1,2,3,4,6,7,8-HpCDF | 13.3 | J | PG/G | 0.667 | 5.95 | Y |
| SO | CDBS1045_S | CDBS1045S111 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 55673-89-7 | HPCDF1234789 | 1,2,3,4,7,8,9-HpCDF | 0.938 | UJ | PG/G | 0.938 | 5.95 | N |
| SO | CDBS1045_S | CDBS1045S111 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 39227-28-6 | HXCDD123478 | 1,2,3,4,7,8-HxCDD | 0.876 | J | PG/G | 0.717 | 5.95 | Y |
| SO | CDBS1045_S | CDBS1045S111 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 70648-26-9 | HXCDF123478 | 1,2,3,4,7,8-HxCDF | 0.924 | J | PG/G | 0.469 | 5.95 | Y |
| SO | CDBS1045_S | CDBS1045S111 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 57653-85-7 | HXCDD123678 | 1,2,3,6,7,8-HxCDD | 5.69 | J | PG/G | 0.6 | 5.95 | Y |
| SO | CDBS1045_S | CDBS1045S111 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 57117-44-9 | HXCDF123678 | 1,2,3,6,7,8-HxCDF | 0.674 | U | PG/G | 0.398 | 5.95 | N |
| SO | CDBS1045_S | CDBS1045S111 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 19408-74-3 | HXCDD123789 | 1,2,3,7,8,9-HxCDD | 1.37 | J | PG/G | 0.693 | 5.95 | Y |
| SO | CDBS1045_S | CDBS1045S111 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 72918-21-9 | HXCDF123789 | 1,2,3,7,8,9-HxCDF | 0.543 | UJ | PG/G | 0.543 | 5.95 | N |
| SO | CDBS1045_S | CDBS1045S111 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 40321-76-4 | PECDD12378 | 1,2,3,7,8-PeCDD | 0.319 | U | PG/G | 0.267 | 5.95 | N |
| SO | CDBS1045_S | CDBS1045S111 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 57117-41-6 | PECDF12378 | 1,2,3,7,8-PeCDF | 0.329 | UJ | PG/G | 0.329 | 5.95 | N |
| SO | CDBS1045_S | CDBS1045S111 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 60851-34-5 | HXCDF234678 | 2,3,4,6,7,8-HxCDF | 0.824 | J | PG/G | 0.44 | 5.95 | Y |
| SO | CDBS1045_S | CDBS1045S111 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 57117-31-4 | PECDF23478 | 2,3,4,7,8-PeCDF | 0.714 | J | PG/G | 0.326 | 5.95 | Y |
| SO | CDBS1045_S | CDBS1045S111 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 1746-01-6 | TCDD2378 | 2,3,7,8-TCDD | 0.25 | UJ | PG/G | 0.25 | 1.19 | N |
| SO | CDBS1045_S | CDBS1045S111 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 51207-31-9 | TCDF2378 | 2,3,7,8-TCDF | 0.36 | UJ | PG/G | 0.36 | 1.19 | N |
| SO | CDBS1045_S | CDBS1045S111 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 72-54-8 | DDD44 | 4,4'-DDD | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S111 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 72-55-9 | DDE44 | 4,4'-DDE | 0.72 | J | µg/kg | 0.36 | 1.2 | Y |
| SO | CDBS1045_S | CDBS1045S111 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 50-29-3 | DDT44 | 4,4'-DDT | 2.4 | = | µg/kg | 1.2 | 1.2 | Y |
| SO | CDBS1045_S | CDBS1045S111 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 309-00-2 | ALDRIN | Aldrin | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S111 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 319-84-6 | BHCALPHA | Alpha-BHC | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S111 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 5103-71-9 | CHLORDANEA | Alpha-Chlordane | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S111 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-36-0 | SB | Antimony | 0.156 | U | mg/kg | 0.599 | 0.599 | N |
| SO | CDBS1045_S | CDBS1045S111 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 12674-11-2 | PCB1016 | Aroclor 1016 | 12 | U | µg/kg | 12 | 12 | N |
| SO | CDBS1045_S | CDBS1045S111 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 11104-28-2 | PCB1221 | Aroclor 1221 | 12 | U | µg/kg | 12 | 12 | N |
| SO | CDBS1045_S | CDBS1045S111 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 11141-16-5 | PCB1232 | Aroclor 1232 | 12 | U | µg/kg | 12 | 12 | N |
| SO | CDBS1045_S | CDBS1045S111 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 53469-21-9 | PCB1242 | Aroclor 1242 | 12 | U | µg/kg | 12 | 12 | N |
| SO | CDBS1045_S | CDBS1045S111 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 12672-29-6 | PCB1248 | Aroclor 1248 | 12 | U | µg/kg | 12 | 12 | N |
| SO | CDBS1045_S | CDBS1045S111 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 11097-69-1 | PCB1254 | Aroclor 1254 | 12 | U | µg/kg | 12 | 12 | N |
| SO | CDBS1045_S | CDBS1045S111 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 11096-82-5 | PCB1260 | Aroclor 1260 | 12 | U | µg/kg | 12 | 12 | N |
| SO | CDBS1045_S | CDBS1045S111 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 37324-23-5 | PCB1262 | Aroclor 1262 | 12 | U | µg/kg | 12 | 12 | N |
| SO | CDBS1045_S | CDBS1045S111 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-38-2 | AS | Arsenic | 1.18 | = | mg/kg | 0.599 | 0.599 | Y |
| SO | CDBS1045_S | CDBS1045S111 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-39-3 | BA | Barium | 28.2 | = | mg/kg | 0.599 | 0.599 | Y |
| SO | CDBS1045_S | CDBS1045S111 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-41-7 | BE | Beryllium | 0.293 | J | mg/kg | 0.246 | 0.359 | Y |
| SO | CDBS1045_S | CDBS1045S111 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 319-85-7 | BHCBETA | Beta-BHC | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S111 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-43-9 | CD | Cadmium | 0.18 | J | mg/kg | 0.144 | 0.24 | Y |
| SO | CDBS1045_S | CDBS1045S111 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 57-74-9 | CHLORDANE | Chlordane | 12 | U | µg/kg | 12 | 12 | N |
| SO | CDBS1045_S | CDBS1045S111 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-47-3 | CR | Chromium | 7.16 | = | mg/kg | 1.2 | 1.2 | Y |
| SO | CDBS1045_S | CDBS1045S111 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-48-4 | CO | Cobalt | 2.63 | = | mg/kg | 0.599 | 0.599 | Y |
| SO | CDBS1045_S | CDBS1045S111 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-50-8 | CU | Copper | 3.59 | = | mg/kg | 0.24 | 0.24 | Y |
| SO | CDBS1045_S | CDBS1045S111 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 319-86-8 | BHCDELTA | Delta-BHC | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S111 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 60-57-1 | DIELDRIN | Dieldrin | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S111 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | M8015D | HC | EFHD (C12-C14) | 4786 | Diesel Range Organics (C12-C14) | 5900 | U | µg/kg | 5900 | 5900 | N |
| SO | CDBS1045_S | CDBS1045S111 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | M8015D | HC | EFHD (C15-C20) | EFHDC15C20 | Diesel Range Organics (C15-C20) | 5900 | U | µg/kg | 5900 | 5900 | N |
| SO | CDBS1045_S | CDBS1045S111 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | M8015D | HC | EFHD (C21-C30) | EFHDC21C30 | Diesel Range Organics (C21-C30) | 6300 | = | µg/kg | 5900 | 5900 | Y |
| SO | CDBS1045_S | CDBS1045S111 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | M8015D | HC | EFHD (C8-C11) | EFHD (C8-C11) | Diesel Range Organics (C8-C11) | 5900 | U | µg/kg | 5900 | 5900 | N |
| SO | CDBS1045_S | CDBS1045S111 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 959-98-8 | ENDOSULFANA | Endosulfan I | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S111 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 33213-65-9 | ENDOSULFANB | Endosulfan II | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S111 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 1031-07-8 | ENDOSULFANS | Endosulfan Sulfate | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S111 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 72-20-8 | ENDRIN | Endrin | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S111 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 7421-93-4 | ENDRINALD | Endrin Aldehyde | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S111 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 53494-70-5 | ENDRINKET | Endrin ketone | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S111 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 58-89-9 | BHCGAMMA | gamma-BHC | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S111 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8015B | HC | GRO C4-C12 | 4541 | GRO (C4-C12) | 600 | U | µg/kg | 600 | 600 | N |
| SO | CDBS1045_S | CDBS1045S111 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 76-44-8 | HEPTACHLOR | Heptachlor | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S111 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 1024-57-3 | HEPT-EPOX | Heptachlor Epoxide | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S111 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7439-92-1 | PB | Lead | 7.78 | = | mg/kg | 0.479 | 0.479 | Y |
| SO | CDBS1045_S | CDBS1045S111 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW7471A | INO | 7439-97-6 | HG | Mercury | 0.0067 | U | mg/kg | 0.095 | 0.095 | N |

APPENDIX C-1

**Soil Washing Data**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| MATRIX | Station ID | Sample ID | Sample Type | Date Collected | Northing | Easting | Upper Depth | Lower Depth | Method | Parameter Class | CAS | Parameter ID | Parameter Name | Conc | Q | Unit | MDL | RL | Detected |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | CDBS1045_S | CDBS1045S111 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 72-43-5 | MTXYCL | Methoxychlor | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S111 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 2385-85-5 | MIREX | Mirex | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S111 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7439-98-7 | MO | Molybdenum | 0.308 | U | mg/kg | 0.12 | 0.12 | N |
| SO | CDBS1045_S | CDBS1045S111 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-02-0 | NI | Nickel | 4.29 | = | mg/kg | 0.479 | 0.479 | Y |
| SO | CDBS1045_S | CDBS1045S111 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 39001-02-0 | OCDF | Octachlorodibenzofuran | 33.7 | J | PG/G | 1.78 | 11.9 | Y |
| SO | CDBS1045_S | CDBS1045S111 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 3268-87-9 | OCDD | Octachlorodibenzo-p-dioxin | 1880 | J | PG/G | 4.83 | 11.9 | Y |
| SO | CDBS1045_S | CDBS1045S111 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | M8015D | HC | EFHD (C31-C40) | 4503 | ORO (C31-C40) | 12000 | = | µg/kg | 5900 | 5900 | Y |
| SO | CDBS1045_S | CDBS1045S111 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 11100-14-4 | PCB1268 | PCB-1268 (Aroclor 1268) | 12 | U | µg/kg | 12 | 12 | N |
| SO | CDBS1045_S | CDBS1045S111 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7782-49-2 | SE | Selenium | 0.316 | U | mg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S111 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-22-4 | AG | Silver | 0.17 | U | mg/kg | 0.24 | 0.24 | N |
| SO | CDBS1045_S | CDBS1045S111 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-28-0 | TL | Thallium | 0.126 | U | mg/kg | 0.24 | 0.24 | N |
| SO | CDBS1045_S | CDBS1045S111 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 37871-00-4 | HPCDD | Total HpCDD | 267 | J | PG/G | 2.52 | 5.95 | Y |
| SO | CDBS1045_S | CDBS1045S111 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 38998-75-3 | HPCDF | Total HpCDF | 39.1 | J | PG/G | 0.667 | 5.95 | Y |
| SO | CDBS1045_S | CDBS1045S111 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 34465-46-8 | HXCDD | Total HxCDD | 25.5 | J | PG/G | 0.6 | 5.95 | Y |
| SO | CDBS1045_S | CDBS1045S111 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 55684-94-1 | HXCDF | Total HxCDF | 28.2 | J | PG/G | 0.398 | 5.95 | Y |
| SO | CDBS1045_S | CDBS1045S111 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW9060 | GENCHEM | 1-01-2 | TOC | Total Organic Carbon | 1820 | J | mg/kg | 33.3 | 100 | Y |
| SO | CDBS1045_S | CDBS1045S111 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 36088-22-9 | PECDD | Total PeCDD | 1.15 | J | PG/G | 0.267 | 5.95 | Y |
| SO | CDBS1045_S | CDBS1045S111 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 30402-15-4 | PECDF | Total PeCDF | 9.73 | J | PG/G | 0.158 | 5.95 | Y |
| SO | CDBS1045_S | CDBS1045S111 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | A2540B | GENCHEM | TSO | TSO | Total Solids | 83.5 | = | PERCENT | | | Y |
| SO | CDBS1045_S | CDBS1045S111 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 41903-57-5 | TCDD | Total TCDD | 0.25 | UJ | PG/G | 0.25 | 1.19 | N |
| SO | CDBS1045_S | CDBS1045S111 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 55722-27-5 | TCDF | Total TCDFs | 2.43 | J | PG/G | 0.407 | 1.19 | Y |
| SO | CDBS1045_S | CDBS1045S111 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 8001-35-2 | TOXAP | Toxaphene | 24 | U | µg/kg | 24 | 24 | N |
| SO | CDBS1045_S | CDBS1045S111 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-62-2 | V | Vanadium | 10.6 | = | mg/kg | 1.2 | 1.2 | Y |
| SO | CDBS1045_S | CDBS1045S111 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-66-6 | ZN | Zinc | 29.9 | = | mg/kg | 5.99 | 5.99 | Y |
| SO | CDBS1045_S | CDBS1045S112 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 35822-46-9 | HPCDD1234678 | 1,2,3,4,6,7,8-HpCDD | 646 | J | PG/G | 1.77 | 7.25 | Y |
| SO | CDBS1045_S | CDBS1045S112 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 67562-39-4 | HPCDF1234678 | 1,2,3,4,6,7,8-HpCDF | 117 | J | PG/G | 0.365 | 7.25 | Y |
| SO | CDBS1045_S | CDBS1045S112 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 55673-89-7 | HPCDF1234789 | 1,2,3,4,7,8,9-HpCDF | 8.62 | J | PG/G | 0.513 | 7.25 | Y |
| SO | CDBS1045_S | CDBS1045S112 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 39227-28-6 | HXCDD123478 | 1,2,3,4,7,8-HxCDD | 7.59 | J | PG/G | 0.638 | 7.25 | Y |
| SO | CDBS1045_S | CDBS1045S112 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 70648-26-9 | HXCDF123478 | 1,2,3,4,7,8-HxCDF | 8.87 | J | PG/G | 0.359 | 7.25 | Y |
| SO | CDBS1045_S | CDBS1045S112 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 57653-85-7 | HXCDD123678 | 1,2,3,6,7,8-HxCDD | 39.4 | J | PG/G | 0.536 | 7.25 | Y |
| SO | CDBS1045_S | CDBS1045S112 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 57117-44-9 | HXCDF123678 | 1,2,3,6,7,8-HxCDF | 6.38 | J | PG/G | 0.304 | 7.25 | Y |
| SO | CDBS1045_S | CDBS1045S112 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 19408-74-3 | HXCDD123789 | 1,2,3,7,8,9-HxCDD | 15.6 | J | PG/G | 0.617 | 7.25 | Y |
| SO | CDBS1045_S | CDBS1045S112 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 72918-21-9 | HXCDF123789 | 1,2,3,7,8,9-HxCDF | 3.48 | J | PG/G | 0.415 | 7.25 | Y |
| SO | CDBS1045_S | CDBS1045S112 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 40321-76-4 | PECDD12378 | 1,2,3,7,8-PeCDD | 3.57 | J | PG/G | 0.164 | 7.25 | Y |
| SO | CDBS1045_S | CDBS1045S112 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 57117-41-6 | PECDF12378 | 1,2,3,7,8-PeCDF | 2.11 | J | PG/G | 0.325 | 7.25 | Y |
| SO | CDBS1045_S | CDBS1045S112 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 60851-34-5 | HXCDF234678 | 2,3,4,6,7,8-HxCDF | 7.42 | J | PG/G | 0.336 | 7.25 | Y |
| SO | CDBS1045_S | CDBS1045S112 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 57117-31-4 | PECDF23478 | 2,3,4,7,8-PeCDF | 6.1 | J | PG/G | 0.322 | 7.25 | Y |
| SO | CDBS1045_S | CDBS1045S112 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 1746-01-6 | TCDD2378 | 2,3,7,8-TCDD | 0.531 | J | PG/G | 0.185 | 1.45 | Y |
| SO | CDBS1045_S | CDBS1045S112 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 51207-31-9 | TCDF2378 | 2,3,7,8-TCDF | 2.89 | J | PG/G | 0.838 | 1.45 | Y |
| SO | CDBS1045_S | CDBS1045S112 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 72-54-8 | DDD44 | 4,4'-DDD | 1.5 | U | µg/kg | 1.5 | 1.5 | N |
| SO | CDBS1045_S | CDBS1045S112 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 72-55-9 | DDE44 | 4,4'-DDE | 1.3 | J | µg/kg | 0.46 | 1.5 | Y |
| SO | CDBS1045_S | CDBS1045S112 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 50-29-3 | DDT44 | 4,4'-DDT | 3.7 | J | µg/kg | 1.5 | 1.5 | Y |
| SO | CDBS1045_S | CDBS1045S112 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 309-00-2 | ALDRIN | Aldrin | 1.5 | U | µg/kg | 1.5 | 1.5 | N |
| SO | CDBS1045_S | CDBS1045S112 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 319-84-6 | BHCALPHA | Alpha-BHC | 1.5 | U | µg/kg | 1.5 | 1.5 | N |
| SO | CDBS1045_S | CDBS1045S112 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 5103-71-9 | CHLORDANEA | Alpha-Chlordane | 1.5 | U | µg/kg | 1.5 | 1.5 | N |
| SO | CDBS1045_S | CDBS1045S112 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-36-0 | SB | Antimony | 0.388 | J | mg/kg | 0.2 | 0.768 | Y |
| SO | CDBS1045_S | CDBS1045S112 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 12674-11-2 | PCB1016 | Aroclor 1016 | 15 | U | µg/kg | 15 | 15 | N |
| SO | CDBS1045_S | CDBS1045S112 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 11104-28-2 | PCB1221 | Aroclor 1221 | 15 | U | µg/kg | 15 | 15 | N |
| SO | CDBS1045_S | CDBS1045S112 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 11141-16-5 | PCB1232 | Aroclor 1232 | 15 | U | µg/kg | 15 | 15 | N |
| SO | CDBS1045_S | CDBS1045S112 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 53469-21-9 | PCB1242 | Aroclor 1242 | 15 | U | µg/kg | 15 | 15 | N |
| SO | CDBS1045_S | CDBS1045S112 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 12672-29-6 | PCB1248 | Aroclor 1248 | 15 | U | µg/kg | 15 | 15 | N |
| SO | CDBS1045_S | CDBS1045S112 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 11097-69-1 | PCB1254 | Aroclor 1254 | 15 | U | µg/kg | 15 | 15 | N |
| SO | CDBS1045_S | CDBS1045S112 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 11096-82-5 | PCB1260 | Aroclor 1260 | 15 | U | µg/kg | 15 | 15 | N |
| SO | CDBS1045_S | CDBS1045S112 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 37324-23-5 | PCB1262 | Aroclor 1262 | 15 | U | µg/kg | 15 | 15 | N |
| SO | CDBS1045_S | CDBS1045S112 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-38-2 | AS | Arsenic | 7.83 | = | mg/kg | 0.768 | 0.768 | Y |
| SO | CDBS1045_S | CDBS1045S112 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-39-3 | BA | Barium | 154 | = | mg/kg | 0.768 | 0.768 | Y |
| SO | CDBS1045_S | CDBS1045S112 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-41-7 | BE | Beryllium | 1.37 | = | mg/kg | 0.461 | 0.461 | Y |
| SO | CDBS1045_S | CDBS1045S112 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 319-85-7 | BHCBETA | Beta-BHC | 1.5 | U | µg/kg | 1.5 | 1.5 | N |
| SO | CDBS1045_S | CDBS1045S112 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-43-9 | CD | Cadmium | 1.44 | = | mg/kg | 0.307 | 0.307 | Y |
| SO | CDBS1045_S | CDBS1045S112 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 57-74-9 | CHLORDANE | Chlordane | 15 | U | µg/kg | 15 | 15 | N |
| SO | CDBS1045_S | CDBS1045S112 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-47-3 | CR | Chromium | 37 | = | mg/kg | 1.54 | 1.54 | Y |
| SO | CDBS1045_S | CDBS1045S112 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-48-4 | CO | Cobalt | 9.88 | = | mg/kg | 0.768 | 0.768 | Y |
| SO | CDBS1045_S | CDBS1045S112 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-50-8 | CU | Copper | 25.7 | = | mg/kg | 0.307 | 0.307 | Y |
| SO | CDBS1045_S | CDBS1045S112 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 319-86-8 | BHCDELTA | Delta-BHC | 1.5 | U | µg/kg | 1.5 | 1.5 | N |
| SO | CDBS1045_S | CDBS1045S112 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 60-57-1 | DIELDRIN | Dieldrin | 1.5 | U | µg/kg | 1.5 | 1.5 | N |
| SO | CDBS1045_S | CDBS1045S112 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | M8015D | HC | EFHD (C12-C14) | 4786 | Diesel Range Organics (C12-C14) | 7500 | U | µg/kg | 7500 | 7500 | N |
| SO | CDBS1045_S | CDBS1045S112 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | M8015D | HC | EFHD (C15-C20) | EFHDC15C20 | Diesel Range Organics (C15-C20) | 7500 | U | µg/kg | 7500 | 7500 | N |
| SO | CDBS1045_S | CDBS1045S112 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | M8015D | HC | EFHD (C21-C30) | EFHDC21C30 | Diesel Range Organics (C21-C30) | 2500 | J | µg/kg | 2400 | 7500 | Y |
| SO | CDBS1045_S | CDBS1045S112 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | M8015D | HC | EFHD (C8-C11) | EFHD (C8-C11) | Diesel Range Organics (C8-C11) | 7500 | U | µg/kg | 7500 | 7500 | N |

APPENDIX C-1

**Soil Washing Data**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| MATRIX | Station ID | Sample ID | Sample Type | Date Collected | Northing | Easting | Upper Depth | Lower Depth | Method | Parameter Class | CAS | Parameter ID | Parameter Name | Conc | Q | Unit | MDL | RL | Detected |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | CDBS1045_S | CDBS1045S112 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 959-98-8 | ENDOSULFANA | Endosulfan I | 1.5 | U | µg/kg | 1.5 | 1.5 | N |
| SO | CDBS1045_S | CDBS1045S112 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 33213-65-9 | ENDOSULFANB | Endosulfan II | 1.5 | U | µg/kg | 1.5 | 1.5 | N |
| SO | CDBS1045_S | CDBS1045S112 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 1031-07-8 | ENDOSULFANS | Endosulfan Sulfate | 1.5 | U | µg/kg | 1.5 | 1.5 | N |
| SO | CDBS1045_S | CDBS1045S112 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 72-20-8 | ENDRIN | Endrin | 1.5 | U | µg/kg | 1.5 | 1.5 | N |
| SO | CDBS1045_S | CDBS1045S112 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 7421-93-4 | ENDRINALD | Endrin Aldehyde | 1.5 | U | µg/kg | 1.5 | 1.5 | N |
| SO | CDBS1045_S | CDBS1045S112 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 53494-70-5 | ENDRINKET | Endrin ketone | 1.5 | U | µg/kg | 1.5 | 1.5 | N |
| SO | CDBS1045_S | CDBS1045S112 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 58-89-9 | BHCGAMMA | gamma-BHC | 1.5 | U | µg/kg | 1.5 | 1.5 | N |
| SO | CDBS1045_S | CDBS1045S112 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8015B | HC | GRO C4-C12 | 4541 | GRO (C4-C12) | 790 | U | µg/kg | 790 | 790 | N |
| SO | CDBS1045_S | CDBS1045S112 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 76-44-8 | HEPTACHLOR | Heptachlor | 1.5 | U | µg/kg | 1.5 | 1.5 | N |
| SO | CDBS1045_S | CDBS1045S112 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 1024-57-3 | HEPT-EPOX | Heptachlor Epoxide | 1.5 | U | µg/kg | 1.5 | 1.5 | N |
| SO | CDBS1045_S | CDBS1045S112 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7439-92-1 | PB | Lead | 53.8 | = | mg/kg | 0.614 | 0.614 | Y |
| SO | CDBS1045_S | CDBS1045S112 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW7471A | INO | 7439-97-6 | HG | Mercury | 0.035 | J | mg/kg | 0.00902 | 0.128 | Y |
| SO | CDBS1045_S | CDBS1045S112 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 72-43-5 | MTXYCL | Methoxychlor | 1.5 | U | µg/kg | 1.5 | 1.5 | N |
| SO | CDBS1045_S | CDBS1045S112 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 2385-85-5 | MIREX | Mirex | 1.5 | U | µg/kg | 1.5 | 1.5 | N |
| SO | CDBS1045_S | CDBS1045S112 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7439-98-7 | MO | Molybdenum | 2 | = | mg/kg | 0.154 | 0.154 | Y |
| SO | CDBS1045_S | CDBS1045S112 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-02-0 | NI | Nickel | 21.9 | = | mg/kg | 0.614 | 0.614 | Y |
| SO | CDBS1045_S | CDBS1045S112 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 39001-02-0 | OCDF | Octachlorodibenzofuran | 326 | J | PG/G | 0.6 | 14.5 | Y |
| SO | CDBS1045_S | CDBS1045S112 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 3268-87-9 | OCDD | Octachlorodibenzo-p-dioxin | 12400 | J | PG/G | 1.14 | 14.5 | Y |
| SO | CDBS1045_S | CDBS1045S112 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | M8015D | HC | EFHD (C31-C40) | 4503 | ORO (C31-C40) | 5600 | J | µg/kg | 2400 | 7500 | Y |
| SO | CDBS1045_S | CDBS1045S112 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 11100-14-4 | PCB1268 | PCB-1268 (Aroclor 1268) | 15 | U | µg/kg | 15 | 15 | N |
| SO | CDBS1045_S | CDBS1045S112 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7782-49-2 | SE | Selenium | 0.644 | J | mg/kg | 0.406 | 1.54 | Y |
| SO | CDBS1045_S | CDBS1045S112 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-22-4 | AG | Silver | 1.22 | = | mg/kg | 0.307 | 0.307 | Y |
| SO | CDBS1045_S | CDBS1045S112 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-28-0 | TL | Thallium | 0.416 | = | mg/kg | 0.307 | 0.307 | Y |
| SO | CDBS1045_S | CDBS1045S112 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 37871-00-4 | HPCDD | Total HpCDD | 1940 | J | PG/G | 1.77 | 7.25 | Y |
| SO | CDBS1045_S | CDBS1045S112 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 38998-75-3 | HPCDF | Total HpCDF | 365 | J | PG/G | 0.365 | 7.25 | Y |
| SO | CDBS1045_S | CDBS1045S112 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 34465-46-8 | HXCDD | Total HxCDD | 211 | J | PG/G | 0.536 | 7.25 | Y |
| SO | CDBS1045_S | CDBS1045S112 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 55684-94-1 | HXCDF | Total HxCDF | 206 | J | PG/G | 0.304 | 7.25 | Y |
| SO | CDBS1045_S | CDBS1045S112 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW9060 | GENCHEM | 1-01-2 | TOC | Total Organic Carbon | 12300 | J | mg/kg | 33.3 | 100 | Y |
| SO | CDBS1045_S | CDBS1045S112 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 36088-22-9 | PECDD | Total PeCDD | 21.8 | J | PG/G | 0.164 | 7.25 | Y |
| SO | CDBS1045_S | CDBS1045S112 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 30402-15-4 | PECDF | Total PeCDF | 92 | J | PG/G | 0.0673 | 7.25 | Y |
| SO | CDBS1045_S | CDBS1045S112 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | A2540B | GENCHEM | TSO | TSO | Total Solids | 65.1 | = | PERCENT | | | Y |
| SO | CDBS1045_S | CDBS1045S112 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 41903-57-5 | TCDD | Total TCDD | 2.92 | J | PG/G | 0.185 | 1.45 | Y |
| SO | CDBS1045_S | CDBS1045S112 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 55722-27-5 | TCDF | Total TCDFs | 42.1 | J | PG/G | 0.429 | 1.45 | Y |
| SO | CDBS1045_S | CDBS1045S112 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 8001-35-2 | TOXAP | Toxaphene | 31 | U | µg/kg | 31 | 31 | N |
| SO | CDBS1045_S | CDBS1045S112 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-62-2 | V | Vanadium | 55.7 | = | mg/kg | 1.54 | 1.54 | Y |
| SO | CDBS1045_S | CDBS1045S112 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-66-6 | ZN | Zinc | 146 | = | mg/kg | 7.68 | 7.68 | Y |
| SO | CDBS1045_S | CDBS1045S113 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 35822-46-9 | HPCDD1234678 | 1,2,3,4,6,7,8-HpCDD | 33.2 | J | PG/G | 0.455 | 5.86 | Y |
| SO | CDBS1045_S | CDBS1045S113 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 67562-39-4 | HPCDF1234678 | 1,2,3,4,6,7,8-HpCDF | 6.98 | J | PG/G | 0.17 | 5.86 | Y |
| SO | CDBS1045_S | CDBS1045S113 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 55673-89-7 | HPCDF1234789 | 1,2,3,4,7,8,9-HpCDF | 0.668 | J | PG/G | 0.239 | 5.86 | Y |
| SO | CDBS1045_S | CDBS1045S113 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 39227-28-6 | HXCDD123478 | 1,2,3,4,7,8-HxCDD | 0.488 | J | PG/G | 0.244 | 5.86 | Y |
| SO | CDBS1045_S | CDBS1045S113 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 70648-26-9 | HXCDF123478 | 1,2,3,4,7,8-HxCDF | 0.544 | U | PG/G | 0.143 | 5.86 | N |
| SO | CDBS1045_S | CDBS1045S113 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 57653-85-7 | HXCDD123678 | 1,2,3,6,7,8-HxCDD | 2.41 | J | PG/G | 0.205 | 5.86 | Y |
| SO | CDBS1045_S | CDBS1045S113 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 57117-44-9 | HXCDF123678 | 1,2,3,6,7,8-HxCDF | 0.493 | U | PG/G | 0.121 | 5.86 | N |
| SO | CDBS1045_S | CDBS1045S113 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 19408-74-3 | HXCDD123789 | 1,2,3,7,8,9-HxCDD | 0.898 | U | PG/G | 0.237 | 5.86 | N |
| SO | CDBS1045_S | CDBS1045S113 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 72918-21-9 | HXCDF123789 | 1,2,3,7,8,9-HxCDF | 0.258 | UJ | PG/G | 0.165 | 5.86 | N |
| SO | CDBS1045_S | CDBS1045S113 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 40321-76-4 | PECDD12378 | 1,2,3,7,8-PeCDD | 0.249 | UJ | PG/G | 0.249 | 5.86 | N |
| SO | CDBS1045_S | CDBS1045S113 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 57117-41-6 | PECDF12378 | 1,2,3,7,8-PeCDF | 0.237 | U | PG/G | 0.14 | 5.86 | N |
| SO | CDBS1045_S | CDBS1045S113 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 60851-34-5 | HXCDF234678 | 2,3,4,6,7,8-HxCDF | 0.61 | J | PG/G | 0.134 | 5.86 | Y |
| SO | CDBS1045_S | CDBS1045S113 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 57117-31-4 | PECDF23478 | 2,3,4,7,8-PeCDF | 0.57 | J | PG/G | 0.139 | 5.86 | Y |
| SO | CDBS1045_S | CDBS1045S113 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 1746-01-6 | TCDD2378 | 2,3,7,8-TCDD | 0.118 | UJ | PG/G | 0.118 | 1.17 | N |
| SO | CDBS1045_S | CDBS1045S113 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 51207-31-9 | TCDF2378 | 2,3,7,8-TCDF | 0.518 | UJ | PG/G | 0.518 | 1.17 | N |
| SO | CDBS1045_S | CDBS1045S113 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 72-54-8 | DDD44 | 4,4'-DDD | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S113 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 72-55-9 | DDE44 | 4,4'-DDE | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S113 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 50-29-3 | DDT44 | 4,4'-DDT | 2 | = | µg/kg | 1.2 | 1.2 | Y |
| SO | CDBS1045_S | CDBS1045S113 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 309-00-2 | ALDRIN | Aldrin | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S113 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 319-84-6 | BHCALPHA | Alpha-BHC | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S113 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 5103-71-9 | CHLORDANEA | Alpha-Chlordane | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S113 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-36-0 | SB | Antimony | 0.156 | U | mg/kg | 0.597 | 0.597 | N |
| SO | CDBS1045_S | CDBS1045S113 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 12674-11-2 | PCB1016 | Aroclor 1016 | 12 | U | µg/kg | 12 | 12 | N |
| SO | CDBS1045_S | CDBS1045S113 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 11104-28-2 | PCB1221 | Aroclor 1221 | 12 | U | µg/kg | 12 | 12 | N |
| SO | CDBS1045_S | CDBS1045S113 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 11141-16-5 | PCB1232 | Aroclor 1232 | 12 | U | µg/kg | 12 | 12 | N |
| SO | CDBS1045_S | CDBS1045S113 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 53469-21-9 | PCB1242 | Aroclor 1242 | 12 | U | µg/kg | 12 | 12 | N |
| SO | CDBS1045_S | CDBS1045S113 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 12672-29-6 | PCB1248 | Aroclor 1248 | 12 | U | µg/kg | 12 | 12 | N |
| SO | CDBS1045_S | CDBS1045S113 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 11097-69-1 | PCB1254 | Aroclor 1254 | 12 | U | µg/kg | 12 | 12 | N |
| SO | CDBS1045_S | CDBS1045S113 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 11096-82-5 | PCB1260 | Aroclor 1260 | 12 | U | µg/kg | 12 | 12 | N |
| SO | CDBS1045_S | CDBS1045S113 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 37324-23-5 | PCB1262 | Aroclor 1262 | 12 | U | µg/kg | 12 | 12 | N |
| SO | CDBS1045_S | CDBS1045S113 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-38-2 | AS | Arsenic | 1.93 | = | mg/kg | 0.597 | 0.597 | Y |
| SO | CDBS1045_S | CDBS1045S113 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-39-3 | BA | Barium | 27.5 | = | mg/kg | 0.597 | 0.597 | Y |
| SO | CDBS1045_S | CDBS1045S113 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-41-7 | BE | Beryllium | 0.245 | U | mg/kg | 0.358 | 0.358 | N |

APPENDIX C-1

**Soil Washing Data**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| MATRIX | Station ID | Sample ID | Sample Type | Date Collected | Northing | Easting | Upper Depth | Lower Depth | Method | Parameter Class | CAS | Parameter ID | Parameter Name | Conc | Q | Unit | MDL | RL | Detected |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | CDBS1045_S | CDBS1045S113 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 319-85-7 | BHCBETA | Beta-BHC | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S113 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-43-9 | CD | Cadmium | 0.162 | J | mg/kg | 0.143 | 0.239 | Y |
| SO | CDBS1045_S | CDBS1045S113 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 57-74-9 | CHLORDANE | Chlordane | 12 | U | µg/kg | 12 | 12 | N |
| SO | CDBS1045_S | CDBS1045S113 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-47-3 | CR | Chromium | 9.2 | = | mg/kg | 1.19 | 1.19 | Y |
| SO | CDBS1045_S | CDBS1045S113 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-48-4 | CO | Cobalt | 3.2 | = | mg/kg | 0.597 | 0.597 | Y |
| SO | CDBS1045_S | CDBS1045S113 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-50-8 | CU | Copper | 3.53 | = | mg/kg | 0.239 | 0.239 | Y |
| SO | CDBS1045_S | CDBS1045S113 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 319-86-8 | BHCDELTA | Delta-BHC | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S113 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 60-57-1 | DIELDRIN | Dieldrin | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S113 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | M8015D | HC | EFHD (C12-C14) | 4786 | Diesel Range Organics (C12-C14) | 5900 | U | µg/kg | 5900 | 5900 | N |
| SO | CDBS1045_S | CDBS1045S113 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | M8015D | HC | EFHD (C15-C20) | EFHDC15C20 | Diesel Range Organics (C15-C20) | 5900 | U | µg/kg | 5900 | 5900 | N |
| SO | CDBS1045_S | CDBS1045S113 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | M8015D | HC | EFHD (C21-C30) | EFHDC21C30 | Diesel Range Organics (C21-C30) | 3700 | J | µg/kg | 1900 | 5900 | Y |
| SO | CDBS1045_S | CDBS1045S113 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | M8015D | HC | EFHD (C8-C11) | EFHD (C8-C11) | Diesel Range Organics (C8-C11) | 5900 | U | µg/kg | 5900 | 5900 | N |
| SO | CDBS1045_S | CDBS1045S113 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 959-98-8 | ENDOSULFANA | Endosulfan I | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S113 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 33213-65-9 | ENDOSULFANB | Endosulfan II | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S113 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 1031-07-8 | ENDOSULFANS | Endosulfan Sulfate | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S113 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 72-20-8 | ENDRIN | Endrin | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S113 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 7421-93-4 | ENDRINALD | Endrin Aldehyde | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S113 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 53494-70-5 | ENDRINKET | Endrin ketone | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S113 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 58-89-9 | BHCGAMMA | gamma-BHC | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S113 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8015B | HC | GRO C4-C12 | 4541 | GRO (C4-C12) | 600 | U | µg/kg | 600 | 600 | N |
| SO | CDBS1045_S | CDBS1045S113 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 76-44-8 | HEPTACHLOR | Heptachlor | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S113 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 1024-57-3 | HEPT-EPOX | Heptachlor Epoxide | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S113 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7439-92-1 | PB | Lead | 9 | = | mg/kg | 0.477 | 0.477 | Y |
| SO | CDBS1045_S | CDBS1045S113 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW7471A | INO | 7439-97-6 | HG | Mercury | 0.00678 | U | mg/kg | 0.0962 | 0.0962 | N |
| SO | CDBS1045_S | CDBS1045S113 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 72-43-5 | MTXYCL | Methoxychlor | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S113 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 2385-85-5 | MIREX | Mirex | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S113 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7439-98-7 | MO | Molybdenum | 0.245 | U | mg/kg | 0.119 | 0.119 | N |
| SO | CDBS1045_S | CDBS1045S113 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-02-0 | NI | Nickel | 4.94 | = | mg/kg | 0.477 | 0.477 | Y |
| SO | CDBS1045_S | CDBS1045S113 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 39001-02-0 | OCDF | Octachlorodibenzofuran | 18.6 | J | PG/G | 0.357 | 11.7 | Y |
| SO | CDBS1045_S | CDBS1045S113 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 3268-87-9 | OCDD | Octachlorodibenzo-p-dioxin | 622 | J | PG/G | 0.736 | 11.7 | Y |
| SO | CDBS1045_S | CDBS1045S113 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | M8015D | HC | EFHD (C31-C40) | 4503 | ORO (C31-C40) | 9500 | = | µg/kg | 5900 | 5900 | Y |
| SO | CDBS1045_S | CDBS1045S113 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 11100-14-4 | PCB1268 | PCB-1268 (Aroclor 1268) | 12 | U | µg/kg | 12 | 12 | N |
| SO | CDBS1045_S | CDBS1045S113 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7782-49-2 | SE | Selenium | 0.315 | U | mg/kg | 1.19 | 1.19 | N |
| SO | CDBS1045_S | CDBS1045S113 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-22-4 | AG | Silver | 0.17 | U | mg/kg | 0.239 | 0.239 | N |
| SO | CDBS1045_S | CDBS1045S113 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-28-0 | TL | Thallium | 0.125 | U | mg/kg | 0.239 | 0.239 | N |
| SO | CDBS1045_S | CDBS1045S113 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 37871-00-4 | HPCDD | Total HpCDD | 104 | J | PG/G | 0.455 | 5.86 | Y |
| SO | CDBS1045_S | CDBS1045S113 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 38998-75-3 | HPCDF | Total HpCDF | 20.6 | J | PG/G | 0.17 | 5.86 | Y |
| SO | CDBS1045_S | CDBS1045S113 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 34465-46-8 | HXCDD | Total HxCDD | 12.5 | J | PG/G | 0.205 | 5.86 | Y |
| SO | CDBS1045_S | CDBS1045S113 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 55684-94-1 | HXCDF | Total HxCDF | 13.7 | J | PG/G | 0.121 | 5.86 | Y |
| SO | CDBS1045_S | CDBS1045S113 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW9060 | GENCHEM | 1-01-2 | TOC | Total Organic Carbon | 1710 | J | mg/kg | 33.3 | 100 | Y |
| SO | CDBS1045_S | CDBS1045S113 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 36088-22-9 | PECDD | Total PeCDD | 0.366 | J | PG/G | 0.249 | 5.86 | Y |
| SO | CDBS1045_S | CDBS1045S113 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 30402-15-4 | PECDF | Total PeCDF | 6.82 | J | PG/G | 0.0565 | 5.86 | Y |
| SO | CDBS1045_S | CDBS1045S113 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | A2540B | GENCHEM | TSO | TSO | Total Solids | 83.8 | = | PERCENT | | | Y |
| SO | CDBS1045_S | CDBS1045S113 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 41903-57-5 | TCDD | Total TCDD | 0.118 | UJ | PG/G | 0.118 | 1.17 | N |
| SO | CDBS1045_S | CDBS1045S113 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 55722-27-5 | TCDF | Total TCDFs | 2.32 | J | PG/G | 0.198 | 1.17 | Y |
| SO | CDBS1045_S | CDBS1045S113 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 8001-35-2 | TOXAP | Toxaphene | 24 | U | µg/kg | 24 | 24 | N |
| SO | CDBS1045_S | CDBS1045S113 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-62-2 | V | Vanadium | 9.7 | = | mg/kg | 1.19 | 1.19 | Y |
| SO | CDBS1045_S | CDBS1045S113 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-66-6 | ZN | Zinc | 39.9 | = | mg/kg | 5.97 | 5.97 | Y |
| SO | CDBS1045_S | CDBS1045S114 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 72-54-8 | DDD44 | 4,4'-DDD | 2.9 | U | µg/kg | 2.9 | 2.9 | N |
| SO | CDBS1045_S | CDBS1045S114 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 72-55-9 | DDE44 | 4,4'-DDE | 2.9 | U | µg/kg | 2.9 | 2.9 | N |
| SO | CDBS1045_S | CDBS1045S114 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 50-29-3 | DDT44 | 4,4'-DDT | 32 | J | µg/kg | 15 | 15 | Y |
| SO | CDBS1045_S | CDBS1045S114 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 309-00-2 | ALDRIN | Aldrin | 2.9 | U | µg/kg | 2.9 | 2.9 | N |
| SO | CDBS1045_S | CDBS1045S114 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 319-84-6 | BHCALPHA | Alpha-BHC | 2.9 | U | µg/kg | 2.9 | 2.9 | N |
| SO | CDBS1045_S | CDBS1045S114 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 5103-71-9 | CHLORDANEA | Alpha-Chlordane | 2.9 | U | µg/kg | 2.9 | 2.9 | N |
| SO | CDBS1045_S | CDBS1045S114 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-36-0 | SB | Antimony | 0.848 | = | mg/kg | 0.703 | 0.703 | Y |
| SO | CDBS1045_S | CDBS1045S114 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 12674-11-2 | PCB1016 | Aroclor 1016 | 29 | U | µg/kg | 29 | 29 | N |
| SO | CDBS1045_S | CDBS1045S114 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 11104-28-2 | PCB1221 | Aroclor 1221 | 29 | U | µg/kg | 29 | 29 | N |
| SO | CDBS1045_S | CDBS1045S114 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 11141-16-5 | PCB1232 | Aroclor 1232 | 29 | U | µg/kg | 29 | 29 | N |
| SO | CDBS1045_S | CDBS1045S114 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 53469-21-9 | PCB1242 | Aroclor 1242 | 29 | U | µg/kg | 29 | 29 | N |
| SO | CDBS1045_S | CDBS1045S114 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 12672-29-6 | PCB1248 | Aroclor 1248 | 29 | U | µg/kg | 29 | 29 | N |
| SO | CDBS1045_S | CDBS1045S114 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 11097-69-1 | PCB1254 | Aroclor 1254 | 29 | U | µg/kg | 29 | 29 | N |
| SO | CDBS1045_S | CDBS1045S114 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 11096-82-5 | PCB1260 | Aroclor 1260 | 29 | U | µg/kg | 29 | 29 | N |
| SO | CDBS1045_S | CDBS1045S114 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 37324-23-5 | PCB1262 | Aroclor 1262 | 29 | U | µg/kg | 29 | 29 | N |
| SO | CDBS1045_S | CDBS1045S114 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-38-2 | AS | Arsenic | 8.59 | = | mg/kg | 0.703 | 0.703 | Y |
| SO | CDBS1045_S | CDBS1045S114 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-39-3 | BA | Barium | 162 | = | mg/kg | 0.703 | 0.703 | Y |
| SO | CDBS1045_S | CDBS1045S114 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-41-7 | BE | Beryllium | 1.22 | = | mg/kg | 0.422 | 0.422 | Y |
| SO | CDBS1045_S | CDBS1045S114 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 319-85-7 | BHCBETA | Beta-BHC | 2.9 | U | µg/kg | 2.9 | 2.9 | N |
| SO | CDBS1045_S | CDBS1045S114 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-43-9 | CD | Cadmium | 2.32 | = | mg/kg | 0.281 | 0.281 | Y |
| SO | CDBS1045_S | CDBS1045S114 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 57-74-9 | CHLORDANE | Chlordane | 29 | U | µg/kg | 29 | 29 | N |

APPENDIX C-1

**Soil Washing Data**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| MATRIX | Station ID | Sample ID | Sample Type | Date Collected | Northing | Easting | Upper Depth | Lower Depth | Method | Parameter Class | CAS | Parameter ID | Parameter Name | Conc | Q | Unit | MDL | RL | Detected |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | CDBS1045_S | CDBS1045S114 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-47-3 | CR | Chromium | 49.4 | = | mg/kg | 1.41 | 1.41 | Y |
| SO | CDBS1045_S | CDBS1045S114 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-48-4 | CO | Cobalt | 13 | = | mg/kg | 0.703 | 0.703 | Y |
| SO | CDBS1045_S | CDBS1045S114 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-50-8 | CU | Copper | 42.1 | = | mg/kg | 0.281 | 0.281 | Y |
| SO | CDBS1045_S | CDBS1045S114 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 319-86-8 | BHCDELTA | Delta-BHC | 2.9 | U | µg/kg | 2.9 | 2.9 | N |
| SO | CDBS1045_S | CDBS1045S114 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 60-57-1 | DIELDRIN | Dieldrin | 2.9 | U | µg/kg | 2.9 | 2.9 | N |
| SO | CDBS1045_S | CDBS1045S114 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | M8015D | HC | EFHD (C12-C14) | 4786 | Diesel Range Organics (C12-C14) | 7100 | U | µg/kg | 7100 | 7100 | N |
| SO | CDBS1045_S | CDBS1045S114 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | M8015D | HC | EFHD (C15-C20) | EFHDC15C20 | Diesel Range Organics (C15-C20) | 7100 | U | µg/kg | 7100 | 7100 | N |
| SO | CDBS1045_S | CDBS1045S114 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | M8015D | HC | EFHD (C21-C30) | EFHDC21C30 | Diesel Range Organics (C21-C30) | 54000 | = | µg/kg | 7100 | 7100 | Y |
| SO | CDBS1045_S | CDBS1045S114 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | M8015D | HC | EFHD (C8-C11) | EFHD (C8-C11) | Diesel Range Organics (C8-C11) | 7100 | U | µg/kg | 7100 | 7100 | N |
| SO | CDBS1045_S | CDBS1045S114 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 959-98-8 | ENDOSULFANA | Endosulfan I | 2.9 | U | µg/kg | 2.9 | 2.9 | N |
| SO | CDBS1045_S | CDBS1045S114 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 33213-65-9 | ENDOSULFANB | Endosulfan II | 2.9 | U | µg/kg | 2.9 | 2.9 | N |
| SO | CDBS1045_S | CDBS1045S114 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 1031-07-8 | ENDOSULFANS | Endosulfan Sulfate | 2.9 | U | µg/kg | 2.9 | 2.9 | N |
| SO | CDBS1045_S | CDBS1045S114 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 72-20-8 | ENDRIN | Endrin | 2.9 | U | µg/kg | 2.9 | 2.9 | N |
| SO | CDBS1045_S | CDBS1045S114 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 7421-93-4 | ENDRINALD | Endrin Aldehyde | 2.9 | U | µg/kg | 2.9 | 2.9 | N |
| SO | CDBS1045_S | CDBS1045S114 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 53494-70-5 | ENDRINKET | Endrin ketone | 2.9 | U | µg/kg | 2.9 | 2.9 | N |
| SO | CDBS1045_S | CDBS1045S114 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 58-89-9 | BHCGAMMA | gamma-BHC | 2.9 | U | µg/kg | 2.9 | 2.9 | N |
| SO | CDBS1045_S | CDBS1045S114 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 76-44-8 | HEPTACHLOR | Heptachlor | 2.9 | U | µg/kg | 2.9 | 2.9 | N |
| SO | CDBS1045_S | CDBS1045S114 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 1024-57-3 | HEPT-EPOX | Heptachlor Epoxide | 2.9 | U | µg/kg | 2.9 | 2.9 | N |
| SO | CDBS1045_S | CDBS1045S114 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7439-92-1 | PB | Lead | 74.9 | = | mg/kg | 0.563 | 0.563 | Y |
| SO | CDBS1045_S | CDBS1045S114 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW7471A | INO | 7439-97-6 | HG | Mercury | 0.105 | J | mg/kg | 0.00812 | 0.115 | Y |
| SO | CDBS1045_S | CDBS1045S114 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 72-43-5 | MTXYCL | Methoxychlor | 2.9 | U | µg/kg | 2.9 | 2.9 | N |
| SO | CDBS1045_S | CDBS1045S114 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 2385-85-5 | MIREX | Mirex | 2.9 | U | µg/kg | 2.9 | 2.9 | N |
| SO | CDBS1045_S | CDBS1045S114 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7439-98-7 | MO | Molybdenum | 3.9 | = | mg/kg | 0.141 | 0.141 | Y |
| SO | CDBS1045_S | CDBS1045S114 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-02-0 | NI | Nickel | 30.7 | = | mg/kg | 0.563 | 0.563 | Y |
| SO | CDBS1045_S | CDBS1045S114 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | M8015D | HC | EFHD (C31-C40) | 4503 | ORO (C31-C40) | 90000 | = | µg/kg | 7100 | 7100 | Y |
| SO | CDBS1045_S | CDBS1045S114 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 11100-14-4 | PCB1268 | PCB-1268 (Aroclor 1268) | 29 | U | µg/kg | 29 | 29 | N |
| SO | CDBS1045_S | CDBS1045S114 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7782-49-2 | SE | Selenium | 0.373 | J | mg/kg | 0.371 | 1.41 | Y |
| SO | CDBS1045_S | CDBS1045S114 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-22-4 | AG | Silver | 2.24 | = | mg/kg | 0.281 | 0.281 | Y |
| SO | CDBS1045_S | CDBS1045S114 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-28-0 | TL | Thallium | 0.493 | = | mg/kg | 0.281 | 0.281 | Y |
| SO | CDBS1045_S | CDBS1045S114 | N | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW9060 | GENCHEM | 1-01-2 | TOC | Total Organic Carbon | 11800 | J | mg/kg | 170 | 510 | Y |
| SO | CDBS1045_S | CDBS1045S114 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | A2540B | GENCHEM | TSO | TSO | Total Solids | 71.1 | = | PERCENT | | | Y |
| SO | CDBS1045_S | CDBS1045S114 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 8001-35-2 | TOXAP | Toxaphene | 59 | U | µg/kg | 59 | 59 | N |
| SO | CDBS1045_S | CDBS1045S114 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-62-2 | V | Vanadium | 56.3 | = | mg/kg | 1.41 | 1.41 | Y |
| SO | CDBS1045_S | CDBS1045S114 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-66-6 | ZN | Zinc | 166 | = | mg/kg | 7.03 | 7.03 | Y |
| SO | CDBS1045_S | CDBS1045S114S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | E1613B | DIOX | 35822-46-9 | HPCDD1234678 | 1,2,3,4,6,7,8-HpCDD | 547 | = | PG/G | 1.94 | 76.1 | Y |
| SO | CDBS1045_S | CDBS1045S114S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | E1613B | DIOX | 67562-39-4 | HPCDF1234678 | 1,2,3,4,6,7,8-HpCDF | 113 | = | PG/G | 0.6 | 76.1 | Y |
| SO | CDBS1045_S | CDBS1045S114S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | E1613B | DIOX | 55673-89-7 | HPCDF1234789 | 1,2,3,4,7,8,9-HpCDF | 9.78 | J | PG/G | 1.22 | 76.1 | Y |
| SO | CDBS1045_S | CDBS1045S114S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | E1613B | DIOX | 39227-28-6 | HXCDD123478 | 1,2,3,4,7,8-HxCDD | 7.6 | UJ | PG/G | 1.09 | 76.1 | N |
| SO | CDBS1045_S | CDBS1045S114S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | E1613B | DIOX | 70648-26-9 | HXCDF123478 | 1,2,3,4,7,8-HxCDF | 9.78 | J | PG/G | 1.28 | 76.1 | Y |
| SO | CDBS1045_S | CDBS1045S114S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | E1613B | DIOX | 57653-85-7 | HXCDD123678 | 1,2,3,6,7,8-HxCDD | 33.7 | UJ | PG/G | 1.16 | 76.1 | N |
| SO | CDBS1045_S | CDBS1045S114S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | E1613B | DIOX | 57117-44-9 | HXCDF123678 | 1,2,3,6,7,8-HxCDF | 5.15 | J | PG/G | 1.19 | 76.1 | Y |
| SO | CDBS1045_S | CDBS1045S114S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | E1613B | DIOX | 19408-74-3 | HXCDD123789 | 1,2,3,7,8,9-HxCDD | 11.9 | UJ | PG/G | 1.19 | 76.1 | N |
| SO | CDBS1045_S | CDBS1045S114S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | E1613B | DIOX | 72918-21-9 | HXCDF123789 | 1,2,3,7,8,9-HxCDF | 1.46 | U | PG/G | 1.46 | 76.1 | N |
| SO | CDBS1045_S | CDBS1045S114S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | E1613B | DIOX | 40321-76-4 | PECDD12378 | 1,2,3,7,8-PeCDD | 5.48 | UJ | PG/G | 1.25 | 76.1 | N |
| SO | CDBS1045_S | CDBS1045S114S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | E1613B | DIOX | 57117-41-6 | PECDF12378 | 1,2,3,7,8-PeCDF | 3.36 | UJ | PG/G | 0.648 | 76.1 | N |
| SO | CDBS1045_S | CDBS1045S114S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | E1613B | DIOX | 60851-34-5 | HXCDF234678 | 2,3,4,6,7,8-HxCDF | 7.27 | UJ | PG/G | 1.12 | 76.1 | N |
| SO | CDBS1045_S | CDBS1045S114S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | E1613B | DIOX | 57117-31-4 | PECDF23478 | 2,3,4,7,8-PeCDF | 2.91 | UJ | PG/G | 0.658 | 76.1 | N |
| SO | CDBS1045_S | CDBS1045S114S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | E1613B | DIOX | 1746-01-6 | TCDD2378 | 2,3,7,8-TCDD | 1.25 | UJ | PG/G | 0.933 | 15.2 | N |
| SO | CDBS1045_S | CDBS1045S114S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | E1613B | DIOX | 51207-31-9 | TCDF2378 | 2,3,7,8-TCDF | 1.31 | UJ | PG/G | 1.29 | 15.2 | N |
| SO | CDBS1045_S | CDBS1045S114S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 72-54-8 | DDD44 | 4,4'-DDD | 5.2 | U | µg/kg | 0.27 | 5.2 | N |
| SO | CDBS1045_S | CDBS1045S114S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 72-55-9 | DDE44 | 4,4'-DDE | 5.2 | U | µg/kg | 0.27 | 5.2 | N |
| SO | CDBS1045_S | CDBS1045S114S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 50-29-3 | DDT44 | 4,4'-DDT | 5 | J | µg/kg | 0.27 | 5.2 | Y |
| SO | CDBS1045_S | CDBS1045S114S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 309-00-2 | ALDRIN | Aldrin | 2.7 | U | µg/kg | 0.13 | 2.7 | N |
| SO | CDBS1045_S | CDBS1045S114S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 319-84-6 | BHCALPHA | Alpha-BHC | 2.7 | U | µg/kg | 0.13 | 2.7 | N |
| SO | CDBS1045_S | CDBS1045S114S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7429-90-5 | AL | Aluminum | 28500 | = | mg/kg | 15.7 | 157 | Y |
| SO | CDBS1045_S | CDBS1045S114S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-36-0 | SB | Antimony | 0.985 | J | mg/kg | 0.313 | 1.57 | Y |
| SO | CDBS1045_S | CDBS1045S114S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 12674-11-2 | PCB1016 | Aroclor 1016 | 27 | U | µg/kg | 13 | 27 | N |
| SO | CDBS1045_S | CDBS1045S114S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 11104-28-2 | PCB1221 | Aroclor 1221 | 52 | U | µg/kg | 27 | 52 | N |
| SO | CDBS1045_S | CDBS1045S114S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 11141-16-5 | PCB1232 | Aroclor 1232 | 27 | U | µg/kg | 13 | 27 | N |
| SO | CDBS1045_S | CDBS1045S114S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 53469-21-9 | PCB1242 | Aroclor 1242 | 27 | U | µg/kg | 13 | 27 | N |
| SO | CDBS1045_S | CDBS1045S114S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 12672-29-6 | PCB1248 | Aroclor 1248 | 27 | U | µg/kg | 13 | 27 | N |
| SO | CDBS1045_S | CDBS1045S114S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 11097-69-1 | PCB1254 | Aroclor 1254 | 27 | U | µg/kg | 13 | 27 | N |
| SO | CDBS1045_S | CDBS1045S114S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 11096-82-5 | PCB1260 | Aroclor 1260 | 27 | U | µg/kg | 13 | 27 | N |
| SO | CDBS1045_S | CDBS1045S114S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 37324-23-5 | PCB1262 | Aroclor 1262 | 52 | U | µg/kg | 27 | 52 | N |
| SO | CDBS1045_S | CDBS1045S114S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 63496-31-1 | PCB5432 | Aroclor 5432 | 79 | U | µg/kg | 40 | 79 | N |
| SO | CDBS1045_S | CDBS1045S114S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 12642-23-8 | PCB5442 | Aroclor 5442 | 79 | U | µg/kg | 40 | 79 | N |
| SO | CDBS1045_S | CDBS1045S114S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 11126-42-4 | PCB5460 | Aroclor 5460 | 79 | U | µg/kg | 40 | 79 | N |
| SO | CDBS1045_S | CDBS1045S114S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-38-2 | AS | Arsenic | 17 | = | mg/kg | 0.157 | 0.783 | Y |
| SO | CDBS1045_S | CDBS1045S114S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-39-3 | BA | Barium | 174 | = | mg/kg | 0.157 | 0.783 | Y |

APPENDIX C-1

**Soil Washing Data**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| MATRIX | Station ID | Sample ID | Sample Type | Date Collected | Northing | Easting | Upper Depth | Lower Depth | Method | Parameter Class | CAS | Parameter ID | Parameter Name | Conc | Q | Unit | MDL | RL | Detected |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | CDBS1045_S | CDBS1045S114S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-41-7 | BE | Beryllium | 1.39 | = | mg/kg | 0.157 | 0.47 | Y |
| SO | CDBS1045_S | CDBS1045S114S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 319-85-7 | BHCBETA | Beta-BHC | 2.7 | U | µg/kg | 0.13 | 2.7 | N |
| SO | CDBS1045_S | CDBS1045S114S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-42-8 | B | Boron | 3.92 | U | mg/kg | 3.92 | 7.83 | N |
| SO | CDBS1045_S | CDBS1045S114S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-43-9 | CD | Cadmium | 1.27 | = | mg/kg | 0.157 | 0.313 | Y |
| SO | CDBS1045_S | CDBS1045S114S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-70-2 | CA | Calcium | 4320 | = | mg/kg | 26.6 | 78.3 | Y |
| SO | CDBS1045_S | CDBS1045S114S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 57-74-9 | CHLORDANE | Chlordane | 27 | U | µg/kg | 2.7 | 27 | N |
| SO | CDBS1045_S | CDBS1045S114S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-47-3 | CR | Chromium | 60 | = | mg/kg | 0.157 | 1.57 | Y |
| SO | CDBS1045_S | CDBS1045S114S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-48-4 | CO | Cobalt | 11.2 | = | mg/kg | 0.157 | 0.783 | Y |
| SO | CDBS1045_S | CDBS1045S114S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-50-8 | CU | Copper | 29.7 | = | mg/kg | 0.313 | 0.783 | Y |
| SO | CDBS1045_S | CDBS1045S114S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 319-86-8 | BHCDELTA | Delta-BHC | 2.7 | U | µg/kg | 0.13 | 2.7 | N |
| SO | CDBS1045_S | CDBS1045S114S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 60-57-1 | DIELDRIN | Dieldrin | 5.2 | U | µg/kg | 0.27 | 5.2 | N |
| SO | CDBS1045_S | CDBS1045S114S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | M8015D | HC | EFHD (C12-C14) | 4786 | Diesel Range Organics (C12-C14) | 7900 | U | µg/kg | 4000 | 7900 | N |
| SO | CDBS1045_S | CDBS1045S114S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | M8015D | HC | EFHD (C15-C20) | EFHDC15C20 | Diesel Range Organics (C15-C20) | 7900 | U | µg/kg | 4000 | 7900 | N |
| SO | CDBS1045_S | CDBS1045S114S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | M8015D | HC | EFHD (C21-C30) | EFHDC21C30 | Diesel Range Organics (C21-C30) | 120000 | = | µg/kg | 4000 | 7900 | Y |
| SO | CDBS1045_S | CDBS1045S114S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | M8015D | HC | EFHD (C8-C11) | EFHD (C8-C11) | Diesel Range Organics (C8-C11) | 7900 | U | µg/kg | 4000 | 7900 | N |
| SO | CDBS1045_S | CDBS1045S114S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 959-98-8 | ENDOSULFANA | Endosulfan I | 2.7 | U | µg/kg | 0.13 | 2.7 | N |
| SO | CDBS1045_S | CDBS1045S114S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 33213-65-9 | ENDOSULFANB | Endosulfan II | 5.2 | U | µg/kg | 0.27 | 5.2 | N |
| SO | CDBS1045_S | CDBS1045S114S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 1031-07-8 | ENDOSULFANS | Endosulfan Sulfate | 5.2 | U | µg/kg | 0.27 | 5.2 | N |
| SO | CDBS1045_S | CDBS1045S114S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 72-20-8 | ENDRIN | Endrin | 5.2 | U | µg/kg | 0.27 | 5.2 | N |
| SO | CDBS1045_S | CDBS1045S114S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 7421-93-4 | ENDRINALD | Endrin Aldehyde | 5.2 | U | µg/kg | 0.27 | 5.2 | N |
| SO | CDBS1045_S | CDBS1045S114S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 53494-70-5 | ENDRINKET | Endrin ketone | 5.2 | U | µg/kg | 0.27 | 5.2 | N |
| SO | CDBS1045_S | CDBS1045S114S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 58-89-9 | BHCGAMMA | gamma-BHC | 2.7 | U | µg/kg | 0.13 | 2.7 | N |
| SO | CDBS1045_S | CDBS1045S114S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 76-44-8 | HEPTACHLOR | Heptachlor | 2.7 | U | µg/kg | 0.13 | 2.7 | N |
| SO | CDBS1045_S | CDBS1045S114S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 1024-57-3 | HEPT-EPOX | Heptachlor Epoxide | 2.7 | U | µg/kg | 0.13 | 2.7 | N |
| SO | CDBS1045_S | CDBS1045S114S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7439-89-6 | FE | Iron | 37600 | = | mg/kg | 15.7 | 78.3 | Y |
| SO | CDBS1045_S | CDBS1045S114S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7439-92-1 | PB | Lead | 52.3 | = | mg/kg | 0.157 | 0.627 | Y |
| SO | CDBS1045_S | CDBS1045S114S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7439-93-2 | LI | Lithium | 54.1 | = | mg/kg | 1.57 | 3.13 | Y |
| SO | CDBS1045_S | CDBS1045S114S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7439-95-4 | MG | Magnesium | 7530 | = | mg/kg | 15.7 | 78.3 | Y |
| SO | CDBS1045_S | CDBS1045S114S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7439-96-5 | MN | Manganese | 530 | = | mg/kg | 0.313 | 1.57 | Y |
| SO | CDBS1045_S | CDBS1045S114S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 72-43-5 | MTXYCL | Methoxychlor | 11 | U | µg/kg | 1.3 | 11 | N |
| SO | CDBS1045_S | CDBS1045S114S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 2385-85-5 | MIREX | Mirex | 2.7 | U | µg/kg | 0.27 | 2.7 | N |
| SO | CDBS1045_S | CDBS1045S114S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7439-98-7 | MO | Molybdenum | 2.87 | = | mg/kg | 0.157 | 0.313 | Y |
| SO | CDBS1045_S | CDBS1045S114S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-02-0 | NI | Nickel | 35.5 | = | mg/kg | 0.157 | 0.627 | Y |
| SO | CDBS1045_S | CDBS1045S114S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | E1613B | DIOX | 39001-02-0 | OCDF | Octachlorodibenzofuran | 302 | = | PG/G | 0.847 | 152 | Y |
| SO | CDBS1045_S | CDBS1045S114S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | E1613B | DIOX | 3268-87-9 | OCDD | Octachlorodibenzo-p-dioxin | 10800 | = | PG/G | 1.39 | 152 | Y |
| SO | CDBS1045_S | CDBS1045S114S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | M8015D | HC | EFHD (C31-C40) | 4503 | ORO (C31-C40) | 49000 | = | µg/kg | 7900 | 16000 | Y |
| SO | CDBS1045_S | CDBS1045S114S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 11100-14-4 | PCB1268 | PCB-1268 (Aroclor 1268) | 52 | U | µg/kg | 27 | 52 | N |
| SO | CDBS1045_S | CDBS1045S114S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW9045D | GENCHEM | E-10139 | PH | pH | 7.67 | = | PH UNITS | | | Y |
| SO | CDBS1045_S | CDBS1045S114S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7723-14-0 | P | Phosphorus | 500 | = | mg/kg | 39.2 | 78.3 | Y |
| SO | CDBS1045_S | CDBS1045S114S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-09-7 | K | Potassium | 4710 | = | mg/kg | 31.3 | 78.3 | Y |
| SO | CDBS1045_S | CDBS1045S114S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7782-49-2 | SE | Selenium | 0.2 | J | mg/kg | 0.157 | 1.57 | Y |
| SO | CDBS1045_S | CDBS1045S114S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-22-4 | AG | Silver | 1.34 | = | mg/kg | 0.157 | 0.313 | Y |
| SO | CDBS1045_S | CDBS1045S114S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-23-5 | NA | Sodium | 218 | = | mg/kg | 31.3 | 78.3 | Y |
| SO | CDBS1045_S | CDBS1045S114S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-24-6 | SR | Strontium | 38.5 | = | mg/kg | 0.157 | 0.783 | Y |
| SO | CDBS1045_S | CDBS1045S114S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-28-0 | TL | Thallium | 0.488 | = | mg/kg | 0.157 | 0.313 | Y |
| SO | CDBS1045_S | CDBS1045S114S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-31-5 | SN | Tin | 18.5 | = | mg/kg | 7.83 | 15.7 | Y |
| SO | CDBS1045_S | CDBS1045S114S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-32-6 | TI | Titanium | 1760 | = | mg/kg | 0.392 | 3.13 | Y |
| SO | CDBS1045_S | CDBS1045S114S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | M8015D | HC | TPH | 4793 | TOTAL EFH(C8-C40) | 170000 | = | µg/kg | 4000 | 7900 | Y |
| SO | CDBS1045_S | CDBS1045S114S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | E1613B | DIOX | 37871-00-4 | HPCDD | Total HpCDD | 1530 | = | PG/G | 1.94 | 76.1 | Y |
| SO | CDBS1045_S | CDBS1045S114S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | E1613B | DIOX | 38998-75-3 | HPCDF | Total HpCDF | 288 | = | PG/G | 0.802 | 76.1 | Y |
| SO | CDBS1045_S | CDBS1045S114S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | E1613B | DIOX | 34465-46-8 | HXCDD | Total HxCDD | 146 | = | PG/G | 1.15 | 76.1 | Y |
| SO | CDBS1045_S | CDBS1045S114S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | E1613B | DIOX | 55684-94-1 | HXCDF | Total HxCDF | 163 | = | PG/G | 1.26 | 76.1 | Y |
| SO | CDBS1045_S | CDBS1045S114S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | Walkley-Blac | GENCHEM | 1-01-2 | TOC | Total Organic Carbon | 8490 | = | mg/kg | 944 | 944 | Y |
| SO | CDBS1045_S | CDBS1045S114S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | E1613B | DIOX | 36088-22-9 | PECDD | Total PeCDD | 22.4 | J | PG/G | 1.25 | 76.1 | Y |
| SO | CDBS1045_S | CDBS1045S114S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | E1613B | DIOX | 30402-15-4 | PECDF | Total PeCDF | 85.2 | = | PG/G | 0.653 | 76.1 | Y |
| SO | CDBS1045_S | CDBS1045S114S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | E1613B | DIOX | 41903-57-5 | TCDD | Total TCDD | 3.53 | J | PG/G | 0.933 | 15.2 | Y |
| SO | CDBS1045_S | CDBS1045S114S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | E1613B | DIOX | 55722-27-5 | TCDF | Total TCDFs | 40.1 | = | PG/G | 1.29 | 15.2 | Y |
| SO | CDBS1045_S | CDBS1045S114S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 8001-35-2 | TOXAP | Toxaphene | 79 | U | µg/kg | 5.2 | 79 | N |
| SO | CDBS1045_S | CDBS1045S114S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-62-2 | V | Vanadium | 64 | = | mg/kg | 0.392 | 1.57 | Y |
| SO | CDBS1045_S | CDBS1045S114S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-66-6 | ZN | Zinc | 140 | = | mg/kg | 1.57 | 7.83 | Y |
| SO | CDBS1045_S | CDBS1045S114S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-67-7 | ZR | Zirconium | 4.34 | J | mg/kg | 3.13 | 7.83 | Y |
| SO | CDBS1045_S | CDBS1045S115 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 35822-46-9 | HPCDD1234678 | 1,2,3,4,6,7,8-HpCDD | 34.4 | J | PG/G | 0.424 | 5.82 | Y |
| SO | CDBS1045_S | CDBS1045S115 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 67562-39-4 | HPCDF1234678 | 1,2,3,4,6,7,8-HpCDF | 4.51 | J | PG/G | 0.103 | 5.82 | Y |
| SO | CDBS1045_S | CDBS1045S115 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 55673-89-7 | HPCDF1234789 | 1,2,3,4,7,8,9-HpCDF | 0.405 | UJ | PG/G | 0.145 | 5.82 | N |
| SO | CDBS1045_S | CDBS1045S115 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 39227-28-6 | HXCDD123478 | 1,2,3,4,7,8-HxCDD | 0.501 | J | PG/G | 0.183 | 5.82 | Y |
| SO | CDBS1045_S | CDBS1045S115 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 70648-26-9 | HXCDF123478 | 1,2,3,4,7,8-HxCDF | 0.666 | J | PG/G | 0.167 | 5.82 | Y |
| SO | CDBS1045_S | CDBS1045S115 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 57653-85-7 | HXCDD123678 | 1,2,3,6,7,8-HxCDD | 2.42 | J | PG/G | 0.153 | 5.82 | Y |
| SO | CDBS1045_S | CDBS1045S115 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 57117-44-9 | HXCDF123678 | 1,2,3,6,7,8-HxCDF | 0.417 | U | PG/G | 0.141 | 5.82 | N |
| SO | CDBS1045_S | CDBS1045S115 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 19408-74-3 | HXCDD123789 | 1,2,3,7,8,9-HxCDD | 1.12 | J | PG/G | 0.177 | 5.82 | Y |

APPENDIX C-1

**Soil Washing Data**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| MATRIX | Station ID | Sample ID | Sample Type | Date Collected | Northing | Easting | Upper Depth | Lower Depth | Method | Parameter Class | CAS | Parameter ID | Parameter Name | Conc | Q | Unit | MDL | RL | Detected |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | CDBS1045_S | CDBS1045S115 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 72918-21-9 | HXCDF123789 | 1,2,3,7,8,9-HxCDF | 0.275 | UJ | PG/G | 0.193 | 5.82 | N |
| SO | CDBS1045_S | CDBS1045S115 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 40321-76-4 | PECDD12378 | 1,2,3,7,8-PeCDD | 0.256 | U | PG/G | 0.249 | 5.82 | N |
| SO | CDBS1045_S | CDBS1045S115 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 57117-41-6 | PECDF12378 | 1,2,3,7,8-PeCDF | 0.233 | UJ | PG/G | 0.233 | 5.82 | N |
| SO | CDBS1045_S | CDBS1045S115 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 60851-34-5 | HXCDF234678 | 2,3,4,6,7,8-HxCDF | 0.436 | U | PG/G | 0.156 | 5.82 | N |
| SO | CDBS1045_S | CDBS1045S115 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 57117-31-4 | PECDF23478 | 2,3,4,7,8-PeCDF | 0.452 | J | PG/G | 0.232 | 5.82 | Y |
| SO | CDBS1045_S | CDBS1045S115 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 1746-01-6 | TCDD2378 | 2,3,7,8-TCDD | 0.121 | J | PG/G | 0.111 | 1.16 | Y |
| SO | CDBS1045_S | CDBS1045S115 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 51207-31-9 | TCDF2378 | 2,3,7,8-TCDF | 0.643 | J | PG/G | 0.503 | 1.16 | Y |
| SO | CDBS1045_S | CDBS1045S115 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 72-54-8 | DDD44 | 4,4'-DDD | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S115 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 72-55-9 | DDE44 | 4,4'-DDE | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S115 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 50-29-3 | DDT44 | 4,4'-DDT | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S115 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 309-00-2 | ALDRIN | Aldrin | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S115 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 319-84-6 | BHCALPHA | Alpha-BHC | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S115 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 5103-71-9 | CHLORDANEA | Alpha-Chlordane | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S115 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-36-0 | SB | Antimony | 0.291 | J | mg/kg | 0.157 | 0.602 | Y |
| SO | CDBS1045_S | CDBS1045S115 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 12674-11-2 | PCB1016 | Aroclor 1016 | 12 | U | µg/kg | 12 | 12 | N |
| SO | CDBS1045_S | CDBS1045S115 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 11104-28-2 | PCB1221 | Aroclor 1221 | 12 | U | µg/kg | 12 | 12 | N |
| SO | CDBS1045_S | CDBS1045S115 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 11141-16-5 | PCB1232 | Aroclor 1232 | 12 | U | µg/kg | 12 | 12 | N |
| SO | CDBS1045_S | CDBS1045S115 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 53469-21-9 | PCB1242 | Aroclor 1242 | 12 | U | µg/kg | 12 | 12 | N |
| SO | CDBS1045_S | CDBS1045S115 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 12672-29-6 | PCB1248 | Aroclor 1248 | 12 | U | µg/kg | 12 | 12 | N |
| SO | CDBS1045_S | CDBS1045S115 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 11097-69-1 | PCB1254 | Aroclor 1254 | 12 | U | µg/kg | 12 | 12 | N |
| SO | CDBS1045_S | CDBS1045S115 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 11096-82-5 | PCB1260 | Aroclor 1260 | 12 | U | µg/kg | 12 | 12 | N |
| SO | CDBS1045_S | CDBS1045S115 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 37324-23-5 | PCB1262 | Aroclor 1262 | 12 | U | µg/kg | 12 | 12 | N |
| SO | CDBS1045_S | CDBS1045S115 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-38-2 | AS | Arsenic | 1.65 | = | mg/kg | 0.602 | 0.602 | Y |
| SO | CDBS1045_S | CDBS1045S115 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-39-3 | BA | Barium | 27.9 | = | mg/kg | 0.602 | 0.602 | Y |
| SO | CDBS1045_S | CDBS1045S115 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-41-7 | BE | Beryllium | 0.332 | J | mg/kg | 0.247 | 0.361 | Y |
| SO | CDBS1045_S | CDBS1045S115 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 319-85-7 | BHCBETA | Beta-BHC | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S115 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-43-9 | CD | Cadmium | 0.166 | J | mg/kg | 0.144 | 0.241 | Y |
| SO | CDBS1045_S | CDBS1045S115 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 57-74-9 | CHLORDANE | Chlordane | 12 | U | µg/kg | 12 | 12 | N |
| SO | CDBS1045_S | CDBS1045S115 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-47-3 | CR | Chromium | 6.97 | = | mg/kg | 1.2 | 1.2 | Y |
| SO | CDBS1045_S | CDBS1045S115 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-48-4 | CO | Cobalt | 2.56 | = | mg/kg | 0.602 | 0.602 | Y |
| SO | CDBS1045_S | CDBS1045S115 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-50-8 | CU | Copper | 3.26 | = | mg/kg | 0.241 | 0.241 | Y |
| SO | CDBS1045_S | CDBS1045S115 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 319-86-8 | BHCDELTA | Delta-BHC | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S115 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 60-57-1 | DIELDRIN | Dieldrin | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S115 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | M8015D | HC | EFHD (C12-C14) | 4786 | Diesel Range Organics (C12-C14) | 6000 | U | µg/kg | 6000 | 6000 | N |
| SO | CDBS1045_S | CDBS1045S115 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | M8015D | HC | EFHD (C15-C20) | EFHDC15C20 | Diesel Range Organics (C15-C20) | 6000 | U | µg/kg | 6000 | 6000 | N |
| SO | CDBS1045_S | CDBS1045S115 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | M8015D | HC | EFHD (C21-C30) | EFHDC21C30 | Diesel Range Organics (C21-C30) | 11000 | = | µg/kg | 6000 | 6000 | Y |
| SO | CDBS1045_S | CDBS1045S115 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | M8015D | HC | EFHD (C8-C11) | EFHD (C8-C11) | Diesel Range Organics (C8-C11) | 19000 | = | µg/kg | 6000 | 6000 | Y |
| SO | CDBS1045_S | CDBS1045S115 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 959-98-8 | ENDOSULFANA | Endosulfan I | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S115 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 33213-65-9 | ENDOSULFANB | Endosulfan II | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S115 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 1031-07-8 | ENDOSULFANS | Endosulfan Sulfate | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S115 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 72-20-8 | ENDRIN | Endrin | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S115 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 7421-93-4 | ENDRINALD | Endrin Aldehyde | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S115 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 53494-70-5 | ENDRINKET | Endrin ketone | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S115 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 58-89-9 | BHCGAMMA | gamma-BHC | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S115 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8015B | HC | GRO C4-C12 | 4541 | GRO (C4-C12) | 190 | J | µg/kg | 150 | 610 | Y |
| SO | CDBS1045_S | CDBS1045S115 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 76-44-8 | HEPTACHLOR | Heptachlor | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S115 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 1024-57-3 | HEPT-EPOX | Heptachlor Epoxide | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S115 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7439-92-1 | PB | Lead | 6.7 | = | mg/kg | 0.481 | 0.481 | Y |
| SO | CDBS1045_S | CDBS1045S115 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW7471A | INO | 7439-97-6 | HG | Mercury | 0.00695 | U | mg/kg | 0.0986 | 0.0986 | N |
| SO | CDBS1045_S | CDBS1045S115 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 72-43-5 | MTXYCL | Methoxychlor | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S115 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 2385-85-5 | MIREX | Mirex | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S115 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7439-98-7 | MO | Molybdenum | 0.126 | U | mg/kg | 0.12 | 0.12 | N |
| SO | CDBS1045_S | CDBS1045S115 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-02-0 | NI | Nickel | 4.23 | = | mg/kg | 0.481 | 0.481 | Y |
| SO | CDBS1045_S | CDBS1045S115 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 39001-02-0 | OCDF | Octachlorodibenzofuran | 10.9 | J | PG/G | 0.291 | 11.6 | Y |
| SO | CDBS1045_S | CDBS1045S115 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 3268-87-9 | OCDD | Octachlorodibenzo-p-dioxin | 470 | J | PG/G | 0.543 | 11.6 | Y |
| SO | CDBS1045_S | CDBS1045S115 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | M8015D | HC | EFHD (C31-C40) | 4503 | ORO (C31-C40) | 28000 | = | µg/kg | 6000 | 6000 | Y |
| SO | CDBS1045_S | CDBS1045S115 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 11100-14-4 | PCB1268 | PCB-1268 (Aroclor 1268) | 12 | U | µg/kg | 12 | 12 | N |
| SO | CDBS1045_S | CDBS1045S115 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7782-49-2 | SE | Selenium | 0.318 | U | mg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S115 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-22-4 | AG | Silver | 0.171 | U | mg/kg | 0.241 | 0.241 | N |
| SO | CDBS1045_S | CDBS1045S115 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-28-0 | TL | Thallium | 0.126 | U | mg/kg | 0.241 | 0.241 | N |
| SO | CDBS1045_S | CDBS1045S115 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 37871-00-4 | HPCDD | Total HpCDD | 98.2 | J | PG/G | 0.424 | 5.82 | Y |
| SO | CDBS1045_S | CDBS1045S115 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 38998-75-3 | HPCDF | Total HpCDF | 12.5 | J | PG/G | 0.103 | 5.82 | Y |
| SO | CDBS1045_S | CDBS1045S115 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 34465-46-8 | HXCDD | Total HxCDD | 19.6 | J | PG/G | 0.153 | 5.82 | Y |
| SO | CDBS1045_S | CDBS1045S115 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 55684-94-1 | HXCDF | Total HxCDF | 10.5 | J | PG/G | 0.141 | 5.82 | Y |
| SO | CDBS1045_S | CDBS1045S115 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW9060 | GENCHEM | 1-01-2 | TOC | Total Organic Carbon | 1380 | J | mg/kg | 33.3 | 100 | Y |
| SO | CDBS1045_S | CDBS1045S115 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 36088-22-9 | PECDD | Total PeCDD | 2.32 | J | PG/G | 0.249 | 5.82 | Y |
| SO | CDBS1045_S | CDBS1045S115 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 30402-15-4 | PECDF | Total PeCDF | 5.16 | J | PG/G | 0.0515 | 5.82 | Y |
| SO | CDBS1045_S | CDBS1045S115 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | A2540B | GENCHEM | TSO | TSO | Total Solids | 83.1 | = | PERCENT | | | Y |
| SO | CDBS1045_S | CDBS1045S115 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 41903-57-5 | TCDD | Total TCDD | 0.443 | J | PG/G | 0.111 | 1.16 | Y |

APPENDIX C-1

**Soil Washing Data**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| MATRIX | Station ID | Sample ID | Sample Type | Date Collected | Northing | Easting | Upper Depth | Lower Depth | Method | Parameter Class | CAS | Parameter ID | Parameter Name | Conc | Q | Unit | MDL | RL | Detected |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | CDBS1045_S | CDBS1045S115 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 55722-27-5 | TCDF | Total TCDFs | 3.16 | J | PG/G | 0.232 | 1.16 | Y |
| SO | CDBS1045_S | CDBS1045S115 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 8001-35-2 | TOXAP | Toxaphene | 24 | U | µg/kg | 24 | 24 | N |
| SO | CDBS1045_S | CDBS1045S115 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-62-2 | V | Vanadium | 10.7 | = | mg/kg | 1.2 | 1.2 | Y |
| SO | CDBS1045_S | CDBS1045S115 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-66-6 | ZN | Zinc | 27.9 | = | mg/kg | 6.02 | 6.02 | Y |
| SO | CDBS1045_S | CDBS1045S116 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 72-54-8 | DDD44 | 4,4'-DDD | 3.5 | U | µg/kg | 3.5 | 3.5 | N |
| SO | CDBS1045_S | CDBS1045S116 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 72-55-9 | DDE44 | 4,4'-DDE | 3.5 | U | µg/kg | 3.5 | 3.5 | N |
| SO | CDBS1045_S | CDBS1045S116 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 50-29-3 | DDT44 | 4,4'-DDT | 3.5 | U | µg/kg | 3.5 | 3.5 | N |
| SO | CDBS1045_S | CDBS1045S116 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 309-00-2 | ALDRIN | Aldrin | 3.5 | U | µg/kg | 3.5 | 3.5 | N |
| SO | CDBS1045_S | CDBS1045S116 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 319-84-6 | BHCALPHA | Alpha-BHC | 3.5 | U | µg/kg | 3.5 | 3.5 | N |
| SO | CDBS1045_S | CDBS1045S116 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 5103-71-9 | CHLORDANEA | Alpha-Chlordane | 3.5 | U | µg/kg | 3.5 | 3.5 | N |
| SO | CDBS1045_S | CDBS1045S116 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-36-0 | SB | Antimony | 1.95 | = | mg/kg | 0.868 | 0.868 | Y |
| SO | CDBS1045_S | CDBS1045S116 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 12674-11-2 | PCB1016 | Aroclor 1016 | 35 | U | µg/kg | 35 | 35 | N |
| SO | CDBS1045_S | CDBS1045S116 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 11104-28-2 | PCB1221 | Aroclor 1221 | 35 | U | µg/kg | 35 | 35 | N |
| SO | CDBS1045_S | CDBS1045S116 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 11141-16-5 | PCB1232 | Aroclor 1232 | 35 | U | µg/kg | 35 | 35 | N |
| SO | CDBS1045_S | CDBS1045S116 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 53469-21-9 | PCB1242 | Aroclor 1242 | 35 | U | µg/kg | 35 | 35 | N |
| SO | CDBS1045_S | CDBS1045S116 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 12672-29-6 | PCB1248 | Aroclor 1248 | 35 | U | µg/kg | 35 | 35 | N |
| SO | CDBS1045_S | CDBS1045S116 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 11097-69-1 | PCB1254 | Aroclor 1254 | 35 | U | µg/kg | 35 | 35 | N |
| SO | CDBS1045_S | CDBS1045S116 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 11096-82-5 | PCB1260 | Aroclor 1260 | 35 | U | µg/kg | 35 | 35 | N |
| SO | CDBS1045_S | CDBS1045S116 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 37324-23-5 | PCB1262 | Aroclor 1262 | 35 | U | µg/kg | 35 | 35 | N |
| SO | CDBS1045_S | CDBS1045S116 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-38-2 | AS | Arsenic | 7.74 | = | mg/kg | 0.868 | 0.868 | Y |
| SO | CDBS1045_S | CDBS1045S116 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-39-3 | BA | Barium | 155 | = | mg/kg | 0.868 | 0.868 | Y |
| SO | CDBS1045_S | CDBS1045S116 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-41-7 | BE | Beryllium | 1.03 | = | mg/kg | 0.521 | 0.521 | Y |
| SO | CDBS1045_S | CDBS1045S116 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 319-85-7 | BHCBETA | Beta-BHC | 3.5 | U | µg/kg | 3.5 | 3.5 | N |
| SO | CDBS1045_S | CDBS1045S116 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-43-9 | CD | Cadmium | 1.32 | = | mg/kg | 0.347 | 0.347 | Y |
| SO | CDBS1045_S | CDBS1045S116 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 57-74-9 | CHLORDANE | Chlordane | 35 | U | µg/kg | 35 | 35 | N |
| SO | CDBS1045_S | CDBS1045S116 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-47-3 | CR | Chromium | 41.5 | = | mg/kg | 1.74 | 1.74 | Y |
| SO | CDBS1045_S | CDBS1045S116 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-48-4 | CO | Cobalt | 11.7 | = | mg/kg | 0.868 | 0.868 | Y |
| SO | CDBS1045_S | CDBS1045S116 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-50-8 | CU | Copper | 34.1 | = | mg/kg | 0.347 | 0.347 | Y |
| SO | CDBS1045_S | CDBS1045S116 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 319-86-8 | BHCDELTA | Delta-BHC | 3.5 | U | µg/kg | 3.5 | 3.5 | N |
| SO | CDBS1045_S | CDBS1045S116 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 60-57-1 | DIELDRIN | Dieldrin | 3.5 | U | µg/kg | 3.5 | 3.5 | N |
| SO | CDBS1045_S | CDBS1045S116 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | M8015D | HC | EFHD (C12-C14) | 4786 | Diesel Range Organics (C12-C14) | 8500 | U | µg/kg | 8500 | 8500 | N |
| SO | CDBS1045_S | CDBS1045S116 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | M8015D | HC | EFHD (C15-C20) | EFHDC15C20 | Diesel Range Organics (C15-C20) | 16000 | = | µg/kg | 8500 | 8500 | Y |
| SO | CDBS1045_S | CDBS1045S116 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | M8015D | HC | EFHD (C21-C30) | EFHDC21C30 | Diesel Range Organics (C21-C30) | 170000 | = | µg/kg | 8500 | 8500 | Y |
| SO | CDBS1045_S | CDBS1045S116 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | M8015D | HC | EFHD (C8-C11) | EFHD (C8-C11) | Diesel Range Organics (C8-C11) | 200000 | = | µg/kg | 8500 | 8500 | Y |
| SO | CDBS1045_S | CDBS1045S116 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 959-98-8 | ENDOSULFANA | Endosulfan I | 3.5 | U | µg/kg | 3.5 | 3.5 | N |
| SO | CDBS1045_S | CDBS1045S116 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 33213-65-9 | ENDOSULFANB | Endosulfan II | 3.5 | U | µg/kg | 3.5 | 3.5 | N |
| SO | CDBS1045_S | CDBS1045S116 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 1031-07-8 | ENDOSULFANS | Endosulfan Sulfate | 3.5 | U | µg/kg | 3.5 | 3.5 | N |
| SO | CDBS1045_S | CDBS1045S116 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 72-20-8 | ENDRIN | Endrin | 3.5 | U | µg/kg | 3.5 | 3.5 | N |
| SO | CDBS1045_S | CDBS1045S116 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 7421-93-4 | ENDRINALD | Endrin Aldehyde | 3.5 | U | µg/kg | 3.5 | 3.5 | N |
| SO | CDBS1045_S | CDBS1045S116 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 53494-70-5 | ENDRINKET | Endrin ketone | 3.5 | U | µg/kg | 3.5 | 3.5 | N |
| SO | CDBS1045_S | CDBS1045S116 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 58-89-9 | BHCGAMMA | gamma-BHC | 3.5 | U | µg/kg | 3.5 | 3.5 | N |
| SO | CDBS1045_S | CDBS1045S116 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8015B | HC | GRO C4-C12 | 4541 | GRO (C4-C12) | 3100000 | = | µg/kg | 170000 | 170000 | Y |
| SO | CDBS1045_S | CDBS1045S116 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 76-44-8 | HEPTACHLOR | Heptachlor | 3.5 | U | µg/kg | 3.5 | 3.5 | N |
| SO | CDBS1045_S | CDBS1045S116 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 1024-57-3 | HEPT-EPOX | Heptachlor Epoxide | 3.5 | U | µg/kg | 3.5 | 3.5 | N |
| SO | CDBS1045_S | CDBS1045S116 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7439-92-1 | PB | Lead | 62.8 | = | mg/kg | 0.694 | 0.694 | Y |
| SO | CDBS1045_S | CDBS1045S116 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW7471A | INO | 7439-97-6 | HG | Mercury | 0.067 | J | mg/kg | 0.0102 | 0.145 | Y |
| SO | CDBS1045_S | CDBS1045S116 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 72-43-5 | MTXYCL | Methoxychlor | 3.5 | U | µg/kg | 3.5 | 3.5 | N |
| SO | CDBS1045_S | CDBS1045S116 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 2385-85-5 | MIREX | Mirex | 3.5 | U | µg/kg | 3.5 | 3.5 | N |
| SO | CDBS1045_S | CDBS1045S116 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7439-98-7 | MO | Molybdenum | 3.3 | = | mg/kg | 0.174 | 0.174 | Y |
| SO | CDBS1045_S | CDBS1045S116 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-02-0 | NI | Nickel | 26.2 | = | mg/kg | 0.694 | 0.694 | Y |
| SO | CDBS1045_S | CDBS1045S116 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | M8015D | HC | EFHD (C31-C40) | 4503 | ORO (C31-C40) | 85000 | = | µg/kg | 8500 | 8500 | Y |
| SO | CDBS1045_S | CDBS1045S116 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 11100-14-4 | PCB1268 | PCB-1268 (Aroclor 1268) | 35 | U | µg/kg | 35 | 35 | N |
| SO | CDBS1045_S | CDBS1045S116 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7782-49-2 | SE | Selenium | 0.521 | J | mg/kg | 0.458 | 1.74 | Y |
| SO | CDBS1045_S | CDBS1045S116 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-22-4 | AG | Silver | 2.49 | = | mg/kg | 0.347 | 0.347 | Y |
| SO | CDBS1045_S | CDBS1045S116 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-28-0 | TL | Thallium | 0.458 | = | mg/kg | 0.347 | 0.347 | Y |
| SO | CDBS1045_S | CDBS1045S116 | N | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW9060 | GENCHEM | 1-01-2 | TOC | Total Organic Carbon | 17700 | = | mg/kg | 322 | 967 | Y |
| SO | CDBS1045_S | CDBS1045S116 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | A2540B | GENCHEM | TSO | TSO | Total Solids | 57.6 | = | PERCENT | | | Y |
| SO | CDBS1045_S | CDBS1045S116 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 8001-35-2 | TOXAP | Toxaphene | 69 | U | µg/kg | 69 | 69 | N |
| SO | CDBS1045_S | CDBS1045S116 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-62-2 | V | Vanadium | 50.7 | = | mg/kg | 1.74 | 1.74 | Y |
| SO | CDBS1045_S | CDBS1045S116 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-66-6 | ZN | Zinc | 151 | = | mg/kg | 8.68 | 8.68 | Y |
| SO | CDBS1045_S | CDBS1045S116S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | E1613B | DIOX | 35822-46-9 | HPCDD1234678 | 1,2,3,4,6,7,8-HpCDD | 513 | = | PG/G | 1.86 | 60.4 | Y |
| SO | CDBS1045_S | CDBS1045S116S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | E1613B | DIOX | 67562-39-4 | HPCDF1234678 | 1,2,3,4,6,7,8-HpCDF | 112 | = | PG/G | 0.534 | 60.4 | Y |
| SO | CDBS1045_S | CDBS1045S116S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | E1613B | DIOX | 55673-89-7 | HPCDF1234789 | 1,2,3,4,7,8,9-HpCDF | 8.32 | J | PG/G | 0.89 | 60.4 | Y |
| SO | CDBS1045_S | CDBS1045S116S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | E1613B | DIOX | 39227-28-6 | HXCDD123478 | 1,2,3,4,7,8-HxCDD | 5.3 | UJ | PG/G | 1.16 | 60.4 | N |
| SO | CDBS1045_S | CDBS1045S116S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | E1613B | DIOX | 70648-26-9 | HXCDF123478 | 1,2,3,4,7,8-HxCDF | 11.2 | J | PG/G | 1.22 | 60.4 | Y |
| SO | CDBS1045_S | CDBS1045S116S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | E1613B | DIOX | 57653-85-7 | HXCDD123678 | 1,2,3,6,7,8-HxCDD | 33.9 | J | PG/G | 1.32 | 60.4 | Y |
| SO | CDBS1045_S | CDBS1045S116S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | E1613B | DIOX | 57117-44-9 | HXCDF123678 | 1,2,3,6,7,8-HxCDF | 7.61 | J | PG/G | 1.1 | 60.4 | Y |
| SO | CDBS1045_S | CDBS1045S116S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | E1613B | DIOX | 19408-74-3 | HXCDD123789 | 1,2,3,7,8,9-HxCDD | 10.9 | J | PG/G | 1.29 | 60.4 | Y |
| SO | CDBS1045_S | CDBS1045S116S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | E1613B | DIOX | 72918-21-9 | HXCDF123789 | 1,2,3,7,8,9-HxCDF | 1.43 | U | PG/G | 1.43 | 60.4 | N |

APPENDIX C-1

**Soil Washing Data**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| MATRIX | Station ID | Sample ID | Sample Type | Date Collected | Northing | Easting | Upper Depth | Lower Depth | Method | Parameter Class | CAS | Parameter ID | Parameter Name | Conc | Q | Unit | MDL | RL | Detected |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | CDBS1045_S | CDBS1045S116S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | E1613B | DIOX | 40321-76-4 | PECDD12378 | 1,2,3,7,8-PeCDD | 2.33 | UJ | PG/G | 0.792 | 60.4 | N |
| SO | CDBS1045_S | CDBS1045S116S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | E1613B | DIOX | 57117-41-6 | PECDF12378 | 1,2,3,7,8-PeCDF | 2.92 | UJ | PG/G | 0.536 | 60.4 | N |
| SO | CDBS1045_S | CDBS1045S116S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | E1613B | DIOX | 60851-34-5 | HXCDF234678 | 2,3,4,6,7,8-HxCDF | 6.35 | J | PG/G | 1.08 | 60.4 | Y |
| SO | CDBS1045_S | CDBS1045S116S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | E1613B | DIOX | 57117-31-4 | PECDF23478 | 2,3,4,7,8-PeCDF | 2.33 | UJ | PG/G | 0.557 | 60.4 | N |
| SO | CDBS1045_S | CDBS1045S116S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | E1613B | DIOX | 1746-01-6 | TCDD2378 | 2,3,7,8-TCDD | 0.646 | U | PG/G | 0.646 | 12.1 | N |
| SO | CDBS1045_S | CDBS1045S116S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | E1613B | DIOX | 51207-31-9 | TCDF2378 | 2,3,7,8-TCDF | 1.02 | U | PG/G | 1.02 | 12.1 | N |
| SO | CDBS1045_S | CDBS1045S116S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 72-54-8 | DDD44 | 4,4'-DDD | 0.63 | J | µg/kg | 0.25 | 4.9 | Y |
| SO | CDBS1045_S | CDBS1045S116S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 72-55-9 | DDE44 | 4,4'-DDE | 2.1 | J | µg/kg | 0.25 | 4.9 | Y |
| SO | CDBS1045_S | CDBS1045S116S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 50-29-3 | DDT44 | 4,4'-DDT | 1.7 | J | µg/kg | 0.25 | 4.9 | Y |
| SO | CDBS1045_S | CDBS1045S116S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 309-00-2 | ALDRIN | Aldrin | 0.69 | J | µg/kg | 0.12 | 2.5 | Y |
| SO | CDBS1045_S | CDBS1045S116S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 319-84-6 | BHCALPHA | Alpha-BHC | 2.5 | U | µg/kg | 0.12 | 2.5 | N |
| SO | CDBS1045_S | CDBS1045S116S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7429-90-5 | AL | Aluminum | 23300 | = | mg/kg | 14.5 | 145 | Y |
| SO | CDBS1045_S | CDBS1045S116S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-36-0 | SB | Antimony | 0.824 | J | mg/kg | 0.29 | 1.45 | Y |
| SO | CDBS1045_S | CDBS1045S116S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 12674-11-2 | PCB1016 | Aroclor 1016 | 25 | U | µg/kg | 13 | 25 | N |
| SO | CDBS1045_S | CDBS1045S116S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 11104-28-2 | PCB1221 | Aroclor 1221 | 49 | U | µg/kg | 25 | 49 | N |
| SO | CDBS1045_S | CDBS1045S116S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 11141-16-5 | PCB1232 | Aroclor 1232 | 25 | U | µg/kg | 13 | 25 | N |
| SO | CDBS1045_S | CDBS1045S116S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 53469-21-9 | PCB1242 | Aroclor 1242 | 25 | U | µg/kg | 13 | 25 | N |
| SO | CDBS1045_S | CDBS1045S116S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 12672-29-6 | PCB1248 | Aroclor 1248 | 25 | U | µg/kg | 13 | 25 | N |
| SO | CDBS1045_S | CDBS1045S116S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 11097-69-1 | PCB1254 | Aroclor 1254 | 25 | U | µg/kg | 13 | 25 | N |
| SO | CDBS1045_S | CDBS1045S116S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 11096-82-5 | PCB1260 | Aroclor 1260 | 25 | U | µg/kg | 13 | 25 | N |
| SO | CDBS1045_S | CDBS1045S116S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 37324-23-5 | PCB1262 | Aroclor 1262 | 49 | U | µg/kg | 25 | 49 | N |
| SO | CDBS1045_S | CDBS1045S116S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 63496-31-1 | PCB5432 | Aroclor 5432 | 75 | U | µg/kg | 37 | 75 | N |
| SO | CDBS1045_S | CDBS1045S116S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 12642-23-8 | PCB5442 | Aroclor 5442 | 75 | U | µg/kg | 37 | 75 | N |
| SO | CDBS1045_S | CDBS1045S116S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 11126-42-4 | PCB5460 | Aroclor 5460 | 75 | U | µg/kg | 37 | 75 | N |
| SO | CDBS1045_S | CDBS1045S116S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-38-2 | AS | Arsenic | 13.1 | = | mg/kg | 0.145 | 0.726 | Y |
| SO | CDBS1045_S | CDBS1045S116S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-39-3 | BA | Barium | 143 | = | mg/kg | 0.145 | 0.726 | Y |
| SO | CDBS1045_S | CDBS1045S116S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-41-7 | BE | Beryllium | 1.06 | = | mg/kg | 0.145 | 0.435 | Y |
| SO | CDBS1045_S | CDBS1045S116S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 319-85-7 | BHCBETA | Beta-BHC | 2.5 | U | µg/kg | 0.12 | 2.5 | N |
| SO | CDBS1045_S | CDBS1045S116S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-42-8 | B | Boron | 3.63 | U | mg/kg | 3.63 | 7.26 | N |
| SO | CDBS1045_S | CDBS1045S116S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-43-9 | CD | Cadmium | 0.958 | = | mg/kg | 0.145 | 0.29 | Y |
| SO | CDBS1045_S | CDBS1045S116S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-70-2 | CA | Calcium | 3730 | = | mg/kg | 24.7 | 72.6 | Y |
| SO | CDBS1045_S | CDBS1045S116S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 57-74-9 | CHLORDANE | Chlordane | 25 | U | µg/kg | 2.5 | 25 | N |
| SO | CDBS1045_S | CDBS1045S116S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-47-3 | CR | Chromium | 50.6 | = | mg/kg | 0.145 | 1.45 | Y |
| SO | CDBS1045_S | CDBS1045S116S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-48-4 | CO | Cobalt | 8.66 | = | mg/kg | 0.145 | 0.726 | Y |
| SO | CDBS1045_S | CDBS1045S116S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-50-8 | CU | Copper | 22.5 | = | mg/kg | 0.29 | 0.726 | Y |
| SO | CDBS1045_S | CDBS1045S116S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 319-86-8 | BHCDELTA | Delta-BHC | 2.5 | U | µg/kg | 0.12 | 2.5 | N |
| SO | CDBS1045_S | CDBS1045S116S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 60-57-1 | DIELDRIN | Dieldrin | 4.9 | U | µg/kg | 0.25 | 4.9 | N |
| SO | CDBS1045_S | CDBS1045S116S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | M8015D | HC | EFHD (C12-C14) | 4786 | Diesel Range Organics (C12-C14) | 16000 | = | µg/kg | 3700 | 7500 | Y |
| SO | CDBS1045_S | CDBS1045S116S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | M8015D | HC | EFHD (C15-C20) | EFHDC15C20 | Diesel Range Organics (C15-C20) | 360000 | = | µg/kg | 3700 | 7500 | Y |
| SO | CDBS1045_S | CDBS1045S116S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | M8015D | HC | EFHD (C21-C30) | EFHDC21C30 | Diesel Range Organics (C21-C30) | 2400000 | = | µg/kg | 3700 | 7500 | Y |
| SO | CDBS1045_S | CDBS1045S116S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | M8015D | HC | EFHD (C8-C11) | EFHD (C8-C11) | Diesel Range Organics (C8-C11) | 290000 | = | µg/kg | 3700 | 7500 | Y |
| SO | CDBS1045_S | CDBS1045S116S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 959-98-8 | ENDOSULFANA | Endosulfan I | 2.5 | U | µg/kg | 0.12 | 2.5 | N |
| SO | CDBS1045_S | CDBS1045S116S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 33213-65-9 | ENDOSULFANB | Endosulfan II | 4.9 | U | µg/kg | 0.25 | 4.9 | N |
| SO | CDBS1045_S | CDBS1045S116S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 1031-07-8 | ENDOSULFANS | Endosulfan Sulfate | 4.9 | U | µg/kg | 0.25 | 4.9 | N |
| SO | CDBS1045_S | CDBS1045S116S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 72-20-8 | ENDRIN | Endrin | 4.9 | U | µg/kg | 0.25 | 4.9 | N |
| SO | CDBS1045_S | CDBS1045S116S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 7421-93-4 | ENDRINALD | Endrin Aldehyde | 4.9 | U | µg/kg | 0.25 | 4.9 | N |
| SO | CDBS1045_S | CDBS1045S116S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 53494-70-5 | ENDRINKET | Endrin ketone | 4.9 | U | µg/kg | 0.25 | 4.9 | N |
| SO | CDBS1045_S | CDBS1045S116S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 58-89-9 | BHCGAMMA | gamma-BHC | 0.75 | J | µg/kg | 0.12 | 2.5 | Y |
| SO | CDBS1045_S | CDBS1045S116S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 76-44-8 | HEPTACHLOR | Heptachlor | 2.5 | U | µg/kg | 0.12 | 2.5 | N |
| SO | CDBS1045_S | CDBS1045S116S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 1024-57-3 | HEPT-EPOX | Heptachlor Epoxide | 2.5 | U | µg/kg | 0.12 | 2.5 | N |
| SO | CDBS1045_S | CDBS1045S116S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7439-89-6 | FE | Iron | 30600 | = | mg/kg | 14.5 | 72.6 | Y |
| SO | CDBS1045_S | CDBS1045S116S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7439-92-1 | PB | Lead | 44.5 | = | mg/kg | 0.145 | 0.581 | Y |
| SO | CDBS1045_S | CDBS1045S116S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7439-93-2 | LI | Lithium | 42.6 | = | mg/kg | 1.45 | 2.9 | Y |
| SO | CDBS1045_S | CDBS1045S116S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7439-95-4 | MG | Magnesium | 6310 | = | mg/kg | 14.5 | 72.6 | Y |
| SO | CDBS1045_S | CDBS1045S116S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7439-96-5 | MN | Manganese | 403 | = | mg/kg | 0.29 | 1.45 | Y |
| SO | CDBS1045_S | CDBS1045S116S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 72-43-5 | MTXYCL | Methoxychlor | 10 | U | µg/kg | 1.2 | 10 | N |
| SO | CDBS1045_S | CDBS1045S116S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 2385-85-5 | MIREX | Mirex | 2.5 | U | µg/kg | 0.25 | 2.5 | N |
| SO | CDBS1045_S | CDBS1045S116S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7439-98-7 | MO | Molybdenum | 2.39 | = | mg/kg | 0.145 | 0.29 | Y |
| SO | CDBS1045_S | CDBS1045S116S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-02-0 | NI | Nickel | 30.1 | = | mg/kg | 0.145 | 0.581 | Y |
| SO | CDBS1045_S | CDBS1045S116S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | E1613B | DIOX | 39001-02-0 | OCDF | Octachlorodibenzofuran | 302 | = | PG/G | 0.684 | 121 | Y |
| SO | CDBS1045_S | CDBS1045S116S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | E1613B | DIOX | 3268-87-9 | OCDD | Octachlorodibenzo-p-dioxin | 9790 | = | PG/G | 1.21 | 121 | Y |
| SO | CDBS1045_S | CDBS1045S116S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | M8015D | HC | EFHD (C31-C40) | 4503 | ORO (C31-C40) | 220000 | = | µg/kg | 7500 | 15000 | Y |
| SO | CDBS1045_S | CDBS1045S116S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 11100-14-4 | PCB1268 | PCB-1268 (Aroclor 1268) | 49 | U | µg/kg | 25 | 49 | N |
| SO | CDBS1045_S | CDBS1045S116S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW9045D | GENCHEM | E-10139 | PH | pH | 7.38 | = | PH UNITS | | | Y |
| SO | CDBS1045_S | CDBS1045S116S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7723-14-0 | P | Phosphorus | 369 | = | mg/kg | 36.3 | 72.6 | Y |
| SO | CDBS1045_S | CDBS1045S116S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-09-7 | K | Potassium | 4030 | = | mg/kg | 29 | 72.6 | Y |
| SO | CDBS1045_S | CDBS1045S116S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7782-49-2 | SE | Selenium | 0.145 | U | mg/kg | 0.145 | 1.45 | N |
| SO | CDBS1045_S | CDBS1045S116S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-22-4 | AG | Silver | 1.23 | = | mg/kg | 0.145 | 0.29 | Y |
| SO | CDBS1045_S | CDBS1045S116S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-23-5 | NA | Sodium | 180 | = | mg/kg | 29 | 72.6 | Y |

APPENDIX C-1

**Soil Washing Data**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| MATRIX | Station ID | Sample ID | Sample Type | Date Collected | Northing | Easting | Upper Depth | Lower Depth | Method | Parameter Class | CAS | Parameter ID | Parameter Name | Conc | Q | Unit | MDL | RL | Detected |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | CDBS1045_S | CDBS1045S116S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-24-6 | SR | Strontium | 31.7 | = | mg/kg | 0.145 | 0.726 | Y |
| SO | CDBS1045_S | CDBS1045S116S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-28-0 | TL | Thallium | 0.401 | = | mg/kg | 0.145 | 0.29 | Y |
| SO | CDBS1045_S | CDBS1045S116S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-31-5 | SN | Tin | 10.6 | J | mg/kg | 7.26 | 14.5 | Y |
| SO | CDBS1045_S | CDBS1045S116S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-32-6 | TI | Titanium | 1470 | = | mg/kg | 0.363 | 2.9 | Y |
| SO | CDBS1045_S | CDBS1045S116S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | M8015D | HC | TPH | 4793 | TOTAL EFH(C8-C40) | 3300000 | = | µg/kg | 3700 | 7500 | Y |
| SO | CDBS1045_S | CDBS1045S116S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | E1613B | DIOX | 37871-00-4 | HPCDD | Total HpCDD | 1410 | = | PG/G | 1.86 | 60.4 | Y |
| SO | CDBS1045_S | CDBS1045S116S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | E1613B | DIOX | 38998-75-3 | HPCDF | Total HpCDF | 284 | = | PG/G | 0.666 | 60.4 | Y |
| SO | CDBS1045_S | CDBS1045S116S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | E1613B | DIOX | 34465-46-8 | HXCDD | Total HxCDD | 146 | = | PG/G | 1.25 | 60.4 | Y |
| SO | CDBS1045_S | CDBS1045S116S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | E1613B | DIOX | 55684-94-1 | HXCDF | Total HxCDF | 176 | = | PG/G | 1.2 | 60.4 | Y |
| SO | CDBS1045_S | CDBS1045S116S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | Walkley-Blac | GENCHEM | 1-01-2 | TOC | Total Organic Carbon | 18000 | = | mg/kg | 3480 | 3480 | Y |
| SO | CDBS1045_S | CDBS1045S116S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | E1613B | DIOX | 36088-22-9 | PECDD | Total PeCDD | 24.8 | J | PG/G | 0.792 | 60.4 | Y |
| SO | CDBS1045_S | CDBS1045S116S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | E1613B | DIOX | 30402-15-4 | PECDF | Total PeCDF | 79 | = | PG/G | 0.546 | 60.4 | Y |
| SO | CDBS1045_S | CDBS1045S116S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | E1613B | DIOX | 41903-57-5 | TCDD | Total TCDD | 3.79 | J | PG/G | 0.646 | 12.1 | Y |
| SO | CDBS1045_S | CDBS1045S116S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | E1613B | DIOX | 55722-27-5 | TCDF | Total TCDFs | 46.3 | = | PG/G | 1.02 | 12.1 | Y |
| SO | CDBS1045_S | CDBS1045S116S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 8001-35-2 | TOXAP | Toxaphene | 75 | U | µg/kg | 4.9 | 75 | N |
| SO | CDBS1045_S | CDBS1045S116S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-62-2 | V | Vanadium | 51.8 | = | mg/kg | 0.363 | 1.45 | Y |
| SO | CDBS1045_S | CDBS1045S116S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-66-6 | ZN | Zinc | 114 | = | mg/kg | 1.45 | 7.26 | Y |
| SO | CDBS1045_S | CDBS1045S116S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-67-7 | ZR | Zirconium | 3.28 | J | mg/kg | 2.9 | 7.26 | Y |
| SO | CDBS1045_S | CDBS1045S117 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 35822-46-9 | HPCDD1234678 | 1,2,3,4,6,7,8-HpCDD | 86.4 | J | PG/G | 0.703 | 6.44 | Y |
| SO | CDBS1045_S | CDBS1045S117 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 67562-39-4 | HPCDF1234678 | 1,2,3,4,6,7,8-HpCDF | 12.3 | J | PG/G | 0.182 | 6.44 | Y |
| SO | CDBS1045_S | CDBS1045S117 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 55673-89-7 | HPCDF1234789 | 1,2,3,4,7,8,9-HpCDF | 0.76 | J | PG/G | 0.256 | 6.44 | Y |
| SO | CDBS1045_S | CDBS1045S117 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 39227-28-6 | HXCDD123478 | 1,2,3,4,7,8-HxCDD | 0.294 | UJ | PG/G | 0.294 | 6.44 | N |
| SO | CDBS1045_S | CDBS1045S117 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 70648-26-9 | HXCDF123478 | 1,2,3,4,7,8-HxCDF | 1.27 | J | PG/G | 0.159 | 6.44 | Y |
| SO | CDBS1045_S | CDBS1045S117 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 57653-85-7 | HXCDD123678 | 1,2,3,6,7,8-HxCDD | 6.44 | J | PG/G | 0.246 | 6.44 | Y |
| SO | CDBS1045_S | CDBS1045S117 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 57117-44-9 | HXCDF123678 | 1,2,3,6,7,8-HxCDF | 0.479 | U | PG/G | 0.135 | 6.44 | N |
| SO | CDBS1045_S | CDBS1045S117 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 19408-74-3 | HXCDD123789 | 1,2,3,7,8,9-HxCDD | 0.727 | U | PG/G | 0.283 | 6.44 | N |
| SO | CDBS1045_S | CDBS1045S117 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 72918-21-9 | HXCDF123789 | 1,2,3,7,8,9-HxCDF | 0.755 | U | PG/G | 0.184 | 6.44 | N |
| SO | CDBS1045_S | CDBS1045S117 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 40321-76-4 | PECDD12378 | 1,2,3,7,8-PeCDD | 0.151 | UJ | PG/G | 0.151 | 6.44 | N |
| SO | CDBS1045_S | CDBS1045S117 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 57117-41-6 | PECDF12378 | 1,2,3,7,8-PeCDF | 0.368 | U | PG/G | 0.123 | 6.44 | N |
| SO | CDBS1045_S | CDBS1045S117 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 60851-34-5 | HXCDF234678 | 2,3,4,6,7,8-HxCDF | 0.67 | J | PG/G | 0.149 | 6.44 | Y |
| SO | CDBS1045_S | CDBS1045S117 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 57117-31-4 | PECDF23478 | 2,3,4,7,8-PeCDF | 0.675 | J | PG/G | 0.122 | 6.44 | Y |
| SO | CDBS1045_S | CDBS1045S117 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 1746-01-6 | TCDD2378 | 2,3,7,8-TCDD | 0.113 | UJ | PG/G | 0.113 | 1.29 | N |
| SO | CDBS1045_S | CDBS1045S117 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 51207-31-9 | TCDF2378 | 2,3,7,8-TCDF | 0.616 | UJ | PG/G | 0.616 | 1.29 | N |
| SO | CDBS1045_S | CDBS1045S117 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 72-54-8 | DDD44 | 4,4'-DDD | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S117 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 72-55-9 | DDE44 | 4,4'-DDE | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S117 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 50-29-3 | DDT44 | 4,4'-DDT | 1.1 | J | µg/kg | 0.41 | 1.2 | Y |
| SO | CDBS1045_S | CDBS1045S117 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 309-00-2 | ALDRIN | Aldrin | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S117 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 319-84-6 | BHCALPHA | Alpha-BHC | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S117 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 5103-71-9 | CHLORDANEA | Alpha-Chlordane | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S117 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-36-0 | SB | Antimony | 0.159 | U | mg/kg | 0.611 | 0.611 | N |
| SO | CDBS1045_S | CDBS1045S117 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 12674-11-2 | PCB1016 | Aroclor 1016 | 12 | U | µg/kg | 12 | 12 | N |
| SO | CDBS1045_S | CDBS1045S117 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 11104-28-2 | PCB1221 | Aroclor 1221 | 12 | U | µg/kg | 12 | 12 | N |
| SO | CDBS1045_S | CDBS1045S117 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 11141-16-5 | PCB1232 | Aroclor 1232 | 12 | U | µg/kg | 12 | 12 | N |
| SO | CDBS1045_S | CDBS1045S117 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 53469-21-9 | PCB1242 | Aroclor 1242 | 12 | U | µg/kg | 12 | 12 | N |
| SO | CDBS1045_S | CDBS1045S117 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 12672-29-6 | PCB1248 | Aroclor 1248 | 12 | U | µg/kg | 12 | 12 | N |
| SO | CDBS1045_S | CDBS1045S117 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 11097-69-1 | PCB1254 | Aroclor 1254 | 12 | U | µg/kg | 12 | 12 | N |
| SO | CDBS1045_S | CDBS1045S117 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 11096-82-5 | PCB1260 | Aroclor 1260 | 12 | U | µg/kg | 12 | 12 | N |
| SO | CDBS1045_S | CDBS1045S117 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 37324-23-5 | PCB1262 | Aroclor 1262 | 12 | U | µg/kg | 12 | 12 | N |
| SO | CDBS1045_S | CDBS1045S117 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-38-2 | AS | Arsenic | 0.794 | = | mg/kg | 0.611 | 0.611 | Y |
| SO | CDBS1045_S | CDBS1045S117 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-39-3 | BA | Barium | 24.7 | = | mg/kg | 0.611 | 0.611 | Y |
| SO | CDBS1045_S | CDBS1045S117 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-41-7 | BE | Beryllium | 0.251 | U | mg/kg | 0.366 | 0.366 | N |
| SO | CDBS1045_S | CDBS1045S117 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 319-85-7 | BHCBETA | Beta-BHC | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S117 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-43-9 | CD | Cadmium | 0.146 | U | mg/kg | 0.244 | 0.244 | N |
| SO | CDBS1045_S | CDBS1045S117 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 57-74-9 | CHLORDANE | Chlordane | 12 | U | µg/kg | 12 | 12 | N |
| SO | CDBS1045_S | CDBS1045S117 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-47-3 | CR | Chromium | 6.76 | = | mg/kg | 1.22 | 1.22 | Y |
| SO | CDBS1045_S | CDBS1045S117 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-48-4 | CO | Cobalt | 2.02 | = | mg/kg | 0.611 | 0.611 | Y |
| SO | CDBS1045_S | CDBS1045S117 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-50-8 | CU | Copper | 2.67 | = | mg/kg | 0.244 | 0.244 | Y |
| SO | CDBS1045_S | CDBS1045S117 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 319-86-8 | BHCDELTA | Delta-BHC | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S117 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 60-57-1 | DIELDRIN | Dieldrin | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S117 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | M8015D | HC | EFHD (C12-C14) | 4786 | Diesel Range Organics (C12-C14) | 6000 | U | µg/kg | 6000 | 6000 | N |
| SO | CDBS1045_S | CDBS1045S117 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | M8015D | HC | EFHD (C15-C20) | EFHDC15C20 | Diesel Range Organics (C15-C20) | 6000 | U | µg/kg | 6000 | 6000 | N |
| SO | CDBS1045_S | CDBS1045S117 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | M8015D | HC | EFHD (C21-C30) | EFHDC21C30 | Diesel Range Organics (C21-C30) | 27000 | = | µg/kg | 6000 | 6000 | Y |
| SO | CDBS1045_S | CDBS1045S117 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | M8015D | HC | EFHD (C8-C11) | EFHD (C8-C11) | Diesel Range Organics (C8-C11) | 6000 | U | µg/kg | 6000 | 6000 | N |
| SO | CDBS1045_S | CDBS1045S117 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 959-98-8 | ENDOSULFANA | Endosulfan I | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S117 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 33213-65-9 | ENDOSULFANB | Endosulfan II | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S117 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 1031-07-8 | ENDOSULFANS | Endosulfan Sulfate | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S117 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 72-20-8 | ENDRIN | Endrin | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S117 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 7421-93-4 | ENDRINALD | Endrin Aldehyde | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S117 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 53494-70-5 | ENDRINKET | Endrin ketone | 1.2 | U | µg/kg | 1.2 | 1.2 | N |

APPENDIX C-1

**Soil Washing Data**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| MATRIX | Station ID | Sample ID | Sample Type | Date Collected | Northing | Easting | Upper Depth | Lower Depth | Method | Parameter Class | CAS | Parameter ID | Parameter Name | Conc | Q | Unit | MDL | RL | Detected |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | CDBS1045_S | CDBS1045S117 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 58-89-9 | BHCGAMMA | gamma-BHC | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S117 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8015B | HC | GRO C4-C12 | 4541 | GRO (C4-C12) | 610 | U | µg/kg | 610 | 610 | N |
| SO | CDBS1045_S | CDBS1045S117 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 76-44-8 | HEPTACHLOR | Heptachlor | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S117 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 1024-57-3 | HEPT-EPOX | Heptachlor Epoxide | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S117 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7439-92-1 | PB | Lead | 6.69 | = | mg/kg | 0.488 | 0.488 | Y |
| SO | CDBS1045_S | CDBS1045S117 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW7471A | INO | 7439-97-6 | HG | Mercury | 0.00755 | U | mg/kg | 0.107 | 0.107 | N |
| SO | CDBS1045_S | CDBS1045S117 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 72-43-5 | MTXYCL | Methoxychlor | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S117 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 2385-85-5 | MIREX | Mirex | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S117 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7439-98-7 | MO | Molybdenum | 0.216 | U | mg/kg | 0.122 | 0.122 | N |
| SO | CDBS1045_S | CDBS1045S117 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-02-0 | NI | Nickel | 3.65 | = | mg/kg | 0.488 | 0.488 | Y |
| SO | CDBS1045_S | CDBS1045S117 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 39001-02-0 | OCDF | Octachlorodibenzofuran | 38.4 | J | PG/G | 0.528 | 12.9 | Y |
| SO | CDBS1045_S | CDBS1045S117 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 3268-87-9 | OCDD | Octachlorodibenzo-p-dioxin | 2710 | J | PG/G | 0.904 | 12.9 | Y |
| SO | CDBS1045_S | CDBS1045S117 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | M8015D | HC | EFHD (C31-C40) | 4503 | ORO (C31-C40) | 34000 | = | µg/kg | 6000 | 6000 | Y |
| SO | CDBS1045_S | CDBS1045S117 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 11100-14-4 | PCB1268 | PCB-1268 (Aroclor 1268) | 12 | U | µg/kg | 12 | 12 | N |
| SO | CDBS1045_S | CDBS1045S117 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7782-49-2 | SE | Selenium | 0.322 | U | mg/kg | 1.22 | 1.22 | N |
| SO | CDBS1045_S | CDBS1045S117 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-22-4 | AG | Silver | 0.174 | U | mg/kg | 0.244 | 0.244 | N |
| SO | CDBS1045_S | CDBS1045S117 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-28-0 | TL | Thallium | 0.128 | U | mg/kg | 0.244 | 0.244 | N |
| SO | CDBS1045_S | CDBS1045S117 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 37871-00-4 | HPCDD | Total HpCDD | 306 | J | PG/G | 0.703 | 6.44 | Y |
| SO | CDBS1045_S | CDBS1045S117 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 38998-75-3 | HPCDF | Total HpCDF | 41.3 | J | PG/G | 0.182 | 6.44 | Y |
| SO | CDBS1045_S | CDBS1045S117 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 34465-46-8 | HXCDD | Total HxCDD | 21.4 | J | PG/G | 0.246 | 6.44 | Y |
| SO | CDBS1045_S | CDBS1045S117 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 55684-94-1 | HXCDF | Total HxCDF | 32.3 | J | PG/G | 0.135 | 6.44 | Y |
| SO | CDBS1045_S | CDBS1045S117 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW9060 | GENCHEM | 1-01-2 | TOC | Total Organic Carbon | 1320 | J | mg/kg | 33.3 | 100 | Y |
| SO | CDBS1045_S | CDBS1045S117 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 36088-22-9 | PECDD | Total PeCDD | 0.253 | J | PG/G | 0.151 | 6.44 | Y |
| SO | CDBS1045_S | CDBS1045S117 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 30402-15-4 | PECDF | Total PeCDF | 8.26 | J | PG/G | 0.0557 | 6.44 | Y |
| SO | CDBS1045_S | CDBS1045S117 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | A2540B | GENCHEM | TSO | TSO | Total Solids | 81.9 | = | PERCENT | | | Y |
| SO | CDBS1045_S | CDBS1045S117 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 41903-57-5 | TCDD | Total TCDD | 0.113 | UJ | PG/G | 0.113 | 1.29 | N |
| SO | CDBS1045_S | CDBS1045S117 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 55722-27-5 | TCDF | Total TCDFs | 2.25 | J | PG/G | 0.186 | 1.29 | Y |
| SO | CDBS1045_S | CDBS1045S117 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 8001-35-2 | TOXAP | Toxaphene | 24 | U | µg/kg | 24 | 24 | N |
| SO | CDBS1045_S | CDBS1045S117 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-62-2 | V | Vanadium | 8.46 | = | mg/kg | 1.22 | 1.22 | Y |
| SO | CDBS1045_S | CDBS1045S117 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-66-6 | ZN | Zinc | 24.7 | = | mg/kg | 6.11 | 6.11 | Y |
| SO | CDBS1045_S | CDBS1045S118 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 72-54-8 | DDD44 | 4,4’-DDD | 3.2 | U | µg/kg | 3.2 | 3.2 | N |
| SO | CDBS1045_S | CDBS1045S118 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 72-55-9 | DDE44 | 4,4’-DDE | 3.2 | U | µg/kg | 3.2 | 3.2 | N |
| SO | CDBS1045_S | CDBS1045S118 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 50-29-3 | DDT44 | 4,4’-DDT | 14 | = | µg/kg | 3.2 | 3.2 | Y |
| SO | CDBS1045_S | CDBS1045S118 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 309-00-2 | ALDRIN | Aldrin | 3.2 | U | µg/kg | 3.2 | 3.2 | N |
| SO | CDBS1045_S | CDBS1045S118 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 319-84-6 | BHCALPHA | Alpha-BHC | 3.2 | U | µg/kg | 3.2 | 3.2 | N |
| SO | CDBS1045_S | CDBS1045S118 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 5103-71-9 | CHLORDANEA | Alpha-Chlordane | 3.2 | U | µg/kg | 3.2 | 3.2 | N |
| SO | CDBS1045_S | CDBS1045S118 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-36-0 | SB | Antimony | 0.902 | = | mg/kg | 0.806 | 0.806 | Y |
| SO | CDBS1045_S | CDBS1045S118 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 12674-11-2 | PCB1016 | Aroclor 1016 | 32 | U | µg/kg | 32 | 32 | N |
| SO | CDBS1045_S | CDBS1045S118 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 11104-28-2 | PCB1221 | Aroclor 1221 | 32 | U | µg/kg | 32 | 32 | N |
| SO | CDBS1045_S | CDBS1045S118 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 11141-16-5 | PCB1232 | Aroclor 1232 | 32 | U | µg/kg | 32 | 32 | N |
| SO | CDBS1045_S | CDBS1045S118 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 53469-21-9 | PCB1242 | Aroclor 1242 | 32 | U | µg/kg | 32 | 32 | N |
| SO | CDBS1045_S | CDBS1045S118 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 12672-29-6 | PCB1248 | Aroclor 1248 | 32 | U | µg/kg | 32 | 32 | N |
| SO | CDBS1045_S | CDBS1045S118 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 11097-69-1 | PCB1254 | Aroclor 1254 | 32 | U | µg/kg | 32 | 32 | N |
| SO | CDBS1045_S | CDBS1045S118 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 11096-82-5 | PCB1260 | Aroclor 1260 | 32 | U | µg/kg | 32 | 32 | N |
| SO | CDBS1045_S | CDBS1045S118 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 37324-23-5 | PCB1262 | Aroclor 1262 | 32 | U | µg/kg | 32 | 32 | N |
| SO | CDBS1045_S | CDBS1045S118 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-38-2 | AS | Arsenic | 5.44 | = | mg/kg | 0.806 | 0.806 | Y |
| SO | CDBS1045_S | CDBS1045S118 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-39-3 | BA | Barium | 112 | = | mg/kg | 0.806 | 0.806 | Y |
| SO | CDBS1045_S | CDBS1045S118 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-41-7 | BE | Beryllium | 0.925 | = | mg/kg | 0.484 | 0.484 | Y |
| SO | CDBS1045_S | CDBS1045S118 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 319-85-7 | BHCBETA | Beta-BHC | 3.2 | U | µg/kg | 3.2 | 3.2 | N |
| SO | CDBS1045_S | CDBS1045S118 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-43-9 | CD | Cadmium | 1.39 | = | mg/kg | 0.323 | 0.323 | Y |
| SO | CDBS1045_S | CDBS1045S118 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 57-74-9 | CHLORDANE | Chlordane | 32 | U | µg/kg | 32 | 32 | N |
| SO | CDBS1045_S | CDBS1045S118 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-47-3 | CR | Chromium | 42.3 | = | mg/kg | 1.61 | 1.61 | Y |
| SO | CDBS1045_S | CDBS1045S118 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-48-4 | CO | Cobalt | 8.88 | = | mg/kg | 0.806 | 0.806 | Y |
| SO | CDBS1045_S | CDBS1045S118 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-50-8 | CU | Copper | 27.7 | = | mg/kg | 0.323 | 0.323 | Y |
| SO | CDBS1045_S | CDBS1045S118 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 319-86-8 | BHCDELTA | Delta-BHC | 3.2 | U | µg/kg | 3.2 | 3.2 | N |
| SO | CDBS1045_S | CDBS1045S118 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 60-57-1 | DIELDRIN | Dieldrin | 3.2 | U | µg/kg | 3.2 | 3.2 | N |
| SO | CDBS1045_S | CDBS1045S118 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | M8015D | HC | EFHD (C12-C14) | 4786 | Diesel Range Organics (C12-C14) | 8100 | U | µg/kg | 8100 | 8100 | N |
| SO | CDBS1045_S | CDBS1045S118 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | M8015D | HC | EFHD (C15-C20) | EFHDC15C20 | Diesel Range Organics (C15-C20) | 5000 | J | µg/kg | 2500 | 8100 | Y |
| SO | CDBS1045_S | CDBS1045S118 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | M8015D | HC | EFHD (C21-C30) | EFHDC21C30 | Diesel Range Organics (C21-C30) | 380000 | = | µg/kg | 8100 | 8100 | Y |
| SO | CDBS1045_S | CDBS1045S118 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | M8015D | HC | EFHD (C8-C11) | EFHD (C8-C11) | Diesel Range Organics (C8-C11) | 8100 | U | µg/kg | 8100 | 8100 | N |
| SO | CDBS1045_S | CDBS1045S118 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 959-98-8 | ENDOSULFANA | Endosulfan I | 3.2 | U | µg/kg | 3.2 | 3.2 | N |
| SO | CDBS1045_S | CDBS1045S118 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 33213-65-9 | ENDOSULFANB | Endosulfan II | 3.2 | U | µg/kg | 3.2 | 3.2 | N |
| SO | CDBS1045_S | CDBS1045S118 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 1031-07-8 | ENDOSULFANS | Endosulfan Sulfate | 3.2 | U | µg/kg | 3.2 | 3.2 | N |
| SO | CDBS1045_S | CDBS1045S118 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 72-20-8 | ENDRIN | Endrin | 3.2 | U | µg/kg | 3.2 | 3.2 | N |
| SO | CDBS1045_S | CDBS1045S118 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 7421-93-4 | ENDRINALD | Endrin Aldehyde | 3.2 | U | µg/kg | 3.2 | 3.2 | N |
| SO | CDBS1045_S | CDBS1045S118 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 53494-70-5 | ENDRINKET | Endrin ketone | 3.2 | U | µg/kg | 3.2 | 3.2 | N |
| SO | CDBS1045_S | CDBS1045S118 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 58-89-9 | BHCGAMMA | gamma-BHC | 3.2 | U | µg/kg | 3.2 | 3.2 | N |
| SO | CDBS1045_S | CDBS1045S118 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8015B | HC | GRO C4-C12 | 4541 | GRO (C4-C12) | 810 | UJ | µg/kg | 810 | 810 | N |
| SO | CDBS1045_S | CDBS1045S118 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 76-44-8 | HEPTACHLOR | Heptachlor | 3.2 | U | µg/kg | 3.2 | 3.2 | N |

APPENDIX C-1

**Soil Washing Data**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| MATRIX | Station ID | Sample ID | Sample Type | Date Collected | Northing | Easting | Upper Depth | Lower Depth | Method | Parameter Class | CAS | Parameter ID | Parameter Name | Conc | Q | Unit | MDL | RL | Detected |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | CDBS1045_S | CDBS1045S118 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 1024-57-3 | HEPT-EPOX | Heptachlor Epoxide | 3.2 | U | µg/kg | 3.2 | 3.2 | N |
| SO | CDBS1045_S | CDBS1045S118 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7439-92-1 | PB | Lead | 52.2 | = | mg/kg | 0.645 | 0.645 | Y |
| SO | CDBS1045_S | CDBS1045S118 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW7471A | INO | 7439-97-6 | HG | Mercury | 0.0949 | J | mg/kg | 0.00963 | 0.137 | Y |
| SO | CDBS1045_S | CDBS1045S118 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 72-43-5 | MTXYCL | Methoxychlor | 3.2 | U | µg/kg | 3.2 | 3.2 | N |
| SO | CDBS1045_S | CDBS1045S118 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 2385-85-5 | MIREX | Mirex | 3.2 | U | µg/kg | 3.2 | 3.2 | N |
| SO | CDBS1045_S | CDBS1045S118 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7439-98-7 | MO | Molybdenum | 3.86 | = | mg/kg | 0.161 | 0.161 | Y |
| SO | CDBS1045_S | CDBS1045S118 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-02-0 | NI | Nickel | 26.5 | = | mg/kg | 0.645 | 0.645 | Y |
| SO | CDBS1045_S | CDBS1045S118 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | M8015D | HC | EFHD (C31-C40) | 4503 | ORO (C31-C40) | 490000 | = | µg/kg | 8100 | 8100 | Y |
| SO | CDBS1045_S | CDBS1045S118 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 11100-14-4 | PCB1268 | PCB-1268 (Aroclor 1268) | 32 | U | µg/kg | 32 | 32 | N |
| SO | CDBS1045_S | CDBS1045S118 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7782-49-2 | SE | Selenium | 0.503 | J | mg/kg | 0.426 | 1.61 | Y |
| SO | CDBS1045_S | CDBS1045S118 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-22-4 | AG | Silver | 1.63 | = | mg/kg | 0.323 | 0.323 | Y |
| SO | CDBS1045_S | CDBS1045S118 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-28-0 | TL | Thallium | 0.315 | J | mg/kg | 0.169 | 0.323 | Y |
| SO | CDBS1045_S | CDBS1045S118 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | A2540B | GENCHEM | TSO | TSO | Total Solids | 62 | = | PERCENT | | | Y |
| SO | CDBS1045_S | CDBS1045S118 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 8001-35-2 | TOXAP | Toxaphene | 65 | U | µg/kg | 65 | 65 | N |
| SO | CDBS1045_S | CDBS1045S118 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-62-2 | V | Vanadium | 41.7 | = | mg/kg | 1.61 | 1.61 | Y |
| SO | CDBS1045_S | CDBS1045S118 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-66-6 | ZN | Zinc | 140 | = | mg/kg | 8.06 | 8.06 | Y |
| SO | CDBS1045_S | CDBS1045S119 | N | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 72-54-8 | DDD44 | 4,4'-DDD | 1.1 | U | µg/kg | 1.1 | 1.1 | N |
| SO | CDBS1045_S | CDBS1045S119 | N | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 72-55-9 | DDE44 | 4,4'-DDE | 1.1 | U | µg/kg | 1.1 | 1.1 | N |
| SO | CDBS1045_S | CDBS1045S119 | N | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 50-29-3 | DDT44 | 4,4'-DDT | 1.5 | = | µg/kg | 1.1 | 1.1 | Y |
| SO | CDBS1045_S | CDBS1045S119 | N | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 309-00-2 | ALDRIN | Aldrin | 1.1 | U | µg/kg | 1.1 | 1.1 | N |
| SO | CDBS1045_S | CDBS1045S119 | N | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 319-84-6 | BHCALPHA | Alpha-BHC | 1.1 | U | µg/kg | 1.1 | 1.1 | N |
| SO | CDBS1045_S | CDBS1045S119 | N | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 5103-71-9 | CHLORDANEA | Alpha-Chlordane | 1.1 | U | µg/kg | 1.1 | 1.1 | N |
| SO | CDBS1045_S | CDBS1045S119 | N | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-36-0 | SB | Antimony | 0.146 | UJ | mg/kg | 0.562 | 0.562 | N |
| SO | CDBS1045_S | CDBS1045S119 | N | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 12674-11-2 | PCB1016 | Aroclor 1016 | 11 | U | µg/kg | 11 | 11 | N |
| SO | CDBS1045_S | CDBS1045S119 | N | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 11104-28-2 | PCB1221 | Aroclor 1221 | 11 | U | µg/kg | 11 | 11 | N |
| SO | CDBS1045_S | CDBS1045S119 | N | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 11141-16-5 | PCB1232 | Aroclor 1232 | 11 | U | µg/kg | 11 | 11 | N |
| SO | CDBS1045_S | CDBS1045S119 | N | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 53469-21-9 | PCB1242 | Aroclor 1242 | 11 | U | µg/kg | 11 | 11 | N |
| SO | CDBS1045_S | CDBS1045S119 | N | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 12672-29-6 | PCB1248 | Aroclor 1248 | 11 | U | µg/kg | 11 | 11 | N |
| SO | CDBS1045_S | CDBS1045S119 | N | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 11097-69-1 | PCB1254 | Aroclor 1254 | 11 | U | µg/kg | 11 | 11 | N |
| SO | CDBS1045_S | CDBS1045S119 | N | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 11096-82-5 | PCB1260 | Aroclor 1260 | 11 | U | µg/kg | 11 | 11 | N |
| SO | CDBS1045_S | CDBS1045S119 | N | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 37324-23-5 | PCB1262 | Aroclor 1262 | 11 | U | µg/kg | 11 | 11 | N |
| SO | CDBS1045_S | CDBS1045S119 | N | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 319-85-7 | BHCBETA | Beta-BHC | 1.1 | U | µg/kg | 1.1 | 1.1 | N |
| SO | CDBS1045_S | CDBS1045S119 | N | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-43-9 | CD | Cadmium | 0.164 | J | mg/kg | 0.135 | 0.225 | Y |
| SO | CDBS1045_S | CDBS1045S119 | N | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 57-74-9 | CHLORDANE | Chlordane | 11 | U | µg/kg | 11 | 11 | N |
| SO | CDBS1045_S | CDBS1045S119 | N | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 319-86-8 | BHCDELTA | Delta-BHC | 1.1 | U | µg/kg | 1.1 | 1.1 | N |
| SO | CDBS1045_S | CDBS1045S119 | N | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 60-57-1 | DIELDRIN | Dieldrin | 1.1 | U | µg/kg | 1.1 | 1.1 | N |
| SO | CDBS1045_S | CDBS1045S119 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | M8015D | HC | EFHD (C12-C14) | 4786 | Diesel Range Organics (C12-C14) | 33000 | = | µg/kg | 26000 | 26000 | Y |
| SO | CDBS1045_S | CDBS1045S119 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | M8015D | HC | EFHD (C15-C20) | EFHDC15C20 | Diesel Range Organics (C15-C20) | 48000 | = | µg/kg | 26000 | 26000 | Y |
| SO | CDBS1045_S | CDBS1045S119 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | M8015D | HC | EFHD (C21-C30) | EFHDC21C30 | Diesel Range Organics (C21-C30) | 860000 | = | µg/kg | 26000 | 26000 | Y |
| SO | CDBS1045_S | CDBS1045S119 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | M8015D | HC | EFHD (C8-C11) | EFHD (C8-C11) | Diesel Range Organics (C8-C11) | 26000 | U | µg/kg | 26000 | 26000 | N |
| SO | CDBS1045_S | CDBS1045S119 | N | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 959-98-8 | ENDOSULFANA | Endosulfan I | 1.1 | U | µg/kg | 1.1 | 1.1 | N |
| SO | CDBS1045_S | CDBS1045S119 | N | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 33213-65-9 | ENDOSULFANB | Endosulfan II | 1.1 | U | µg/kg | 1.1 | 1.1 | N |
| SO | CDBS1045_S | CDBS1045S119 | N | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 1031-07-8 | ENDOSULFANS | Endosulfan Sulfate | 1.1 | U | µg/kg | 1.1 | 1.1 | N |
| SO | CDBS1045_S | CDBS1045S119 | N | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 72-20-8 | ENDRIN | Endrin | 1.1 | U | µg/kg | 1.1 | 1.1 | N |
| SO | CDBS1045_S | CDBS1045S119 | N | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 7421-93-4 | ENDRINALD | Endrin Aldehyde | 1.1 | U | µg/kg | 1.1 | 1.1 | N |
| SO | CDBS1045_S | CDBS1045S119 | N | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 53494-70-5 | ENDRINKET | Endrin ketone | 1.1 | U | µg/kg | 1.1 | 1.1 | N |
| SO | CDBS1045_S | CDBS1045S119 | N | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 58-89-9 | BHCGAMMA | gamma-BHC | 1.1 | U | µg/kg | 1.1 | 1.1 | N |
| SO | CDBS1045_S | CDBS1045S119 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8015B | HC | GRO C4-C12 | 4541 | GRO (C4-C12) | 650 | U | µg/kg | 650 | 650 | N |
| SO | CDBS1045_S | CDBS1045S119 | N | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 76-44-8 | HEPTACHLOR | Heptachlor | 1.1 | U | µg/kg | 1.1 | 1.1 | N |
| SO | CDBS1045_S | CDBS1045S119 | N | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 1024-57-3 | HEPT-EPOX | Heptachlor Epoxide | 1.1 | U | µg/kg | 1.1 | 1.1 | N |
| SO | CDBS1045_S | CDBS1045S119 | N | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7439-92-1 | PB | Lead | 9.73 | = | mg/kg | 0.449 | 0.449 | Y |
| SO | CDBS1045_S | CDBS1045S119 | N | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 72-43-5 | MTXYCL | Methoxychlor | 1.1 | U | µg/kg | 1.1 | 1.1 | N |
| SO | CDBS1045_S | CDBS1045S119 | N | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 2385-85-5 | MIREX | Mirex | 1.1 | U | µg/kg | 1.1 | 1.1 | N |
| SO | CDBS1045_S | CDBS1045S119 | N | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7439-98-7 | MO | Molybdenum | 0.33 | = | mg/kg | 0.112 | 0.112 | Y |
| SO | CDBS1045_S | CDBS1045S119 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | M8015D | HC | EFHD (C31-C40) | 4503 | ORO (C31-C40) | 1300000 | = | µg/kg | 26000 | 26000 | Y |
| SO | CDBS1045_S | CDBS1045S119 | N | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 11100-14-4 | PCB1268 | PCB-1268 (Aroclor 1268) | 11 | U | µg/kg | 11 | 11 | N |
| SO | CDBS1045_S | CDBS1045S119 | N | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-22-4 | AG | Silver | 7.25 | = | mg/kg | 0.225 | 0.225 | Y |
| SO | CDBS1045_S | CDBS1045S119 | N | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW9060 | GENCHEM | 1-01-2 | TOC | Total Organic Carbon | 1220 | = | mg/kg | 33.3 | 100 | Y |
| SO | CDBS1045_S | CDBS1045S119 | N | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | A2540B | GENCHEM | TSO | TSO | Total Solids | 89 | = | PERCENT | | | Y |
| SO | CDBS1045_S | CDBS1045S119 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | A2540B | GENCHEM | TSO | TSO | Total Solids | 77.7 | = | PERCENT | | | Y |
| SO | CDBS1045_S | CDBS1045S119 | N | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 8001-35-2 | TOXAP | Toxaphene | 22 | U | µg/kg | 22 | 22 | N |
| SO | CDBS1045_S | CDBS1045S120 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 35822-46-9 | HPCDD1234678 | 1,2,3,4,6,7,8-HpCDD | 20.5 | J | PG/G | 1.19 | 5.82 | Y |
| SO | CDBS1045_S | CDBS1045S120 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 67562-39-4 | HPCDF1234678 | 1,2,3,4,6,7,8-HpCDF | 3.57 | J | PG/G | 0.337 | 5.82 | Y |
| SO | CDBS1045_S | CDBS1045S120 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 55673-89-7 | HPCDF1234789 | 1,2,3,4,7,8,9-HpCDF | 0.477 | UJ | PG/G | 0.477 | 5.82 | N |
| SO | CDBS1045_S | CDBS1045S120 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 39227-28-6 | HXCDD123478 | 1,2,3,4,7,8-HxCDD | 0.645 | UJ | PG/G | 0.645 | 5.82 | N |
| SO | CDBS1045_S | CDBS1045S120 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 70648-26-9 | HXCDF123478 | 1,2,3,4,7,8-HxCDF | 0.47 | UJ | PG/G | 0.47 | 5.82 | N |
| SO | CDBS1045_S | CDBS1045S120 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 57653-85-7 | HXCDD123678 | 1,2,3,6,7,8-HxCDD | 1.42 | J | PG/G | 0.54 | 5.82 | Y |
| SO | CDBS1045_S | CDBS1045S120 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 57117-44-9 | HXCDF123678 | 1,2,3,6,7,8-HxCDF | 0.398 | UJ | PG/G | 0.398 | 5.82 | N |
| SO | CDBS1045_S | CDBS1045S120 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 19408-74-3 | HXCDD123789 | 1,2,3,7,8,9-HxCDD | 0.624 | UJ | PG/G | 0.624 | 5.82 | N |

APPENDIX C-1

**Soil Washing Data**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| MATRIX | Station ID | Sample ID | Sample Type | Date Collected | Northing | Easting | Upper Depth | Lower Depth | Method | Parameter Class | CAS | Parameter ID | Parameter Name | Conc | Q | Unit | MDL | RL | Detected |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | CDBS1045_S | CDBS1045S120 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 72918-21-9 | HXCDF123789 | 1,2,3,7,8,9-HxCDF | 0.545 | UJ | PG/G | 0.545 | 5.82 | N |
| SO | CDBS1045_S | CDBS1045S120 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 40321-76-4 | PECDD12378 | 1,2,3,7,8-PeCDD | 0.349 | UJ | PG/G | 0.349 | 5.82 | N |
| SO | CDBS1045_S | CDBS1045S120 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 57117-41-6 | PECDF12378 | 1,2,3,7,8-PeCDF | 0.235 | UJ | PG/G | 0.235 | 5.82 | N |
| SO | CDBS1045_S | CDBS1045S120 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 60851-34-5 | HXCDF234678 | 2,3,4,6,7,8-HxCDF | 0.442 | UJ | PG/G | 0.442 | 5.82 | N |
| SO | CDBS1045_S | CDBS1045S120 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 57117-31-4 | PECDF23478 | 2,3,4,7,8-PeCDF | 0.312 | UJ | PG/G | 0.235 | 5.82 | N |
| SO | CDBS1045_S | CDBS1045S120 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 1746-01-6 | TCDD2378 | 2,3,7,8-TCDD | 0.216 | UJ | PG/G | 0.216 | 1.16 | N |
| SO | CDBS1045_S | CDBS1045S120 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 51207-31-9 | TCDF2378 | 2,3,7,8-TCDF | 0.33 | UJ | PG/G | 0.33 | 1.16 | N |
| SO | CDBS1045_S | CDBS1045S120 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 72-54-8 | DDD44 | 4,4'-DDD | 1.3 | U | µg/kg | 1.3 | 1.3 | N |
| SO | CDBS1045_S | CDBS1045S120 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 72-55-9 | DDE44 | 4,4'-DDE | 1.3 | U | µg/kg | 1.3 | 1.3 | N |
| SO | CDBS1045_S | CDBS1045S120 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 50-29-3 | DDT44 | 4,4'-DDT | 1.8 | = | µg/kg | 1.3 | 1.3 | Y |
| SO | CDBS1045_S | CDBS1045S120 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 309-00-2 | ALDRIN | Aldrin | 1.3 | U | µg/kg | 1.3 | 1.3 | N |
| SO | CDBS1045_S | CDBS1045S120 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 319-84-6 | BHCALPHA | Alpha-BHC | 1.3 | U | µg/kg | 1.3 | 1.3 | N |
| SO | CDBS1045_S | CDBS1045S120 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 5103-71-9 | CHLORDANEA | Alpha-Chlordane | 1.3 | U | µg/kg | 1.3 | 1.3 | N |
| SO | CDBS1045_S | CDBS1045S120 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-36-0 | SB | Antimony | 0.169 | U | mg/kg | 0.647 | 0.647 | N |
| SO | CDBS1045_S | CDBS1045S120 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 12674-11-2 | PCB1016 | Aroclor 1016 | 13 | U | µg/kg | 13 | 13 | N |
| SO | CDBS1045_S | CDBS1045S120 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 11104-28-2 | PCB1221 | Aroclor 1221 | 13 | U | µg/kg | 13 | 13 | N |
| SO | CDBS1045_S | CDBS1045S120 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 11141-16-5 | PCB1232 | Aroclor 1232 | 13 | U | µg/kg | 13 | 13 | N |
| SO | CDBS1045_S | CDBS1045S120 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 53469-21-9 | PCB1242 | Aroclor 1242 | 13 | U | µg/kg | 13 | 13 | N |
| SO | CDBS1045_S | CDBS1045S120 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 12672-29-6 | PCB1248 | Aroclor 1248 | 13 | U | µg/kg | 13 | 13 | N |
| SO | CDBS1045_S | CDBS1045S120 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 11097-69-1 | PCB1254 | Aroclor 1254 | 13 | U | µg/kg | 13 | 13 | N |
| SO | CDBS1045_S | CDBS1045S120 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 11096-82-5 | PCB1260 | Aroclor 1260 | 13 | U | µg/kg | 13 | 13 | N |
| SO | CDBS1045_S | CDBS1045S120 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 37324-23-5 | PCB1262 | Aroclor 1262 | 13 | U | µg/kg | 13 | 13 | N |
| SO | CDBS1045_S | CDBS1045S120 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-38-2 | AS | Arsenic | 0.694 | = | mg/kg | 0.647 | 0.647 | Y |
| SO | CDBS1045_S | CDBS1045S120 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-39-3 | BA | Barium | 19.2 | = | mg/kg | 0.647 | 0.647 | Y |
| SO | CDBS1045_S | CDBS1045S120 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-41-7 | BE | Beryllium | 0.266 | U | mg/kg | 0.388 | 0.388 | N |
| SO | CDBS1045_S | CDBS1045S120 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 319-85-7 | BHCBETA | Beta-BHC | 1.3 | U | µg/kg | 1.3 | 1.3 | N |
| SO | CDBS1045_S | CDBS1045S120 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-43-9 | CD | Cadmium | 0.155 | U | mg/kg | 0.259 | 0.259 | N |
| SO | CDBS1045_S | CDBS1045S120 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 57-74-9 | CHLORDANE | Chlordane | 13 | U | µg/kg | 13 | 13 | N |
| SO | CDBS1045_S | CDBS1045S120 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-47-3 | CR | Chromium | 3.96 | = | mg/kg | 1.29 | 1.29 | Y |
| SO | CDBS1045_S | CDBS1045S120 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-48-4 | CO | Cobalt | 1.5 | = | mg/kg | 0.647 | 0.647 | Y |
| SO | CDBS1045_S | CDBS1045S120 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-50-8 | CU | Copper | 2.16 | = | mg/kg | 0.259 | 0.259 | Y |
| SO | CDBS1045_S | CDBS1045S120 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 319-86-8 | BHCDELTA | Delta-BHC | 1.3 | U | µg/kg | 1.3 | 1.3 | N |
| SO | CDBS1045_S | CDBS1045S120 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 60-57-1 | DIELDRIN | Dieldrin | 1.3 | U | µg/kg | 1.3 | 1.3 | N |
| SO | CDBS1045_S | CDBS1045S120 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | M8015D | HC | EFHD (C12-C14) | 4786 | Diesel Range Organics (C12-C14) | 6500 | U | µg/kg | 6500 | 6500 | N |
| SO | CDBS1045_S | CDBS1045S120 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | M8015D | HC | EFHD (C15-C20) | EFHDC15C20 | Diesel Range Organics (C15-C20) | 6500 | U | µg/kg | 6500 | 6500 | N |
| SO | CDBS1045_S | CDBS1045S120 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | M8015D | HC | EFHD (C21-C30) | EFHDC21C30 | Diesel Range Organics (C21-C30) | 6500 | U | µg/kg | 6500 | 6500 | N |
| SO | CDBS1045_S | CDBS1045S120 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | M8015D | HC | EFHD (C8-C11) | EFHD (C8-C11) | Diesel Range Organics (C8-C11) | 6500 | U | µg/kg | 6500 | 6500 | N |
| SO | CDBS1045_S | CDBS1045S120 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 959-98-8 | ENDOSULFANA | Endosulfan I | 1.3 | U | µg/kg | 1.3 | 1.3 | N |
| SO | CDBS1045_S | CDBS1045S120 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 33213-65-9 | ENDOSULFANB | Endosulfan II | 1.3 | U | µg/kg | 1.3 | 1.3 | N |
| SO | CDBS1045_S | CDBS1045S120 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 1031-07-8 | ENDOSULFANS | Endosulfan Sulfate | 1.3 | U | µg/kg | 1.3 | 1.3 | N |
| SO | CDBS1045_S | CDBS1045S120 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 72-20-8 | ENDRIN | Endrin | 1.3 | U | µg/kg | 1.3 | 1.3 | N |
| SO | CDBS1045_S | CDBS1045S120 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 7421-93-4 | ENDRINALD | Endrin Aldehyde | 1.3 | U | µg/kg | 1.3 | 1.3 | N |
| SO | CDBS1045_S | CDBS1045S120 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 53494-70-5 | ENDRINKET | Endrin ketone | 1.3 | U | µg/kg | 1.3 | 1.3 | N |
| SO | CDBS1045_S | CDBS1045S120 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 58-89-9 | BHCGAMMA | gamma-BHC | 1.3 | U | µg/kg | 1.3 | 1.3 | N |
| SO | CDBS1045_S | CDBS1045S120 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8015B | HC | GRO C4-C12 | 4541 | GRO (C4-C12) | 630 | U | µg/kg | 630 | 630 | N |
| SO | CDBS1045_S | CDBS1045S120 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 76-44-8 | HEPTACHLOR | Heptachlor | 1.3 | U | µg/kg | 1.3 | 1.3 | N |
| SO | CDBS1045_S | CDBS1045S120 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 1024-57-3 | HEPT-EPOX | Heptachlor Epoxide | 1.3 | U | µg/kg | 1.3 | 1.3 | N |
| SO | CDBS1045_S | CDBS1045S120 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7439-92-1 | PB | Lead | 4.05 | = | mg/kg | 0.517 | 0.517 | Y |
| SO | CDBS1045_S | CDBS1045S120 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW7471A | INO | 7439-97-6 | HG | Mercury | 0.00723 | U | mg/kg | 0.103 | 0.103 | N |
| SO | CDBS1045_S | CDBS1045S120 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 72-43-5 | MTXYCL | Methoxychlor | 1.3 | U | µg/kg | 1.3 | 1.3 | N |
| SO | CDBS1045_S | CDBS1045S120 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 2385-85-5 | MIREX | Mirex | 1.3 | U | µg/kg | 1.3 | 1.3 | N |
| SO | CDBS1045_S | CDBS1045S120 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7439-98-7 | MO | Molybdenum | 0.0327 | U | mg/kg | 0.129 | 0.129 | N |
| SO | CDBS1045_S | CDBS1045S120 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-02-0 | NI | Nickel | 2.51 | = | mg/kg | 0.517 | 0.517 | Y |
| SO | CDBS1045_S | CDBS1045S120 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 39001-02-0 | OCDF | Octachlorodibenzofuran | 9.14 | J | PG/G | 1.41 | 11.6 | Y |
| SO | CDBS1045_S | CDBS1045S120 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 3268-87-9 | OCDD | Octachlorodibenzo-p-dioxin | 423 | J | PG/G | 2.93 | 11.6 | Y |
| SO | CDBS1045_S | CDBS1045S120 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | M8015D | HC | EFHD (C31-C40) | 4503 | ORO (C31-C40) | 2800 | J | µg/kg | 2000 | 6500 | Y |
| SO | CDBS1045_S | CDBS1045S120 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 11100-14-4 | PCB1268 | PCB-1268 (Aroclor 1268) | 13 | U | µg/kg | 13 | 13 | N |
| SO | CDBS1045_S | CDBS1045S120 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7782-49-2 | SE | Selenium | 0.342 | U | mg/kg | 1.29 | 1.29 | N |
| SO | CDBS1045_S | CDBS1045S120 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-22-4 | AG | Silver | 0.184 | U | mg/kg | 0.259 | 0.259 | N |
| SO | CDBS1045_S | CDBS1045S120 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-28-0 | TL | Thallium | 0.136 | U | mg/kg | 0.259 | 0.259 | N |
| SO | CDBS1045_S | CDBS1045S120 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 37871-00-4 | HPCDD | Total HpCDD | 67.3 | J | PG/G | 1.19 | 5.82 | Y |
| SO | CDBS1045_S | CDBS1045S120 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 38998-75-3 | HPCDF | Total HpCDF | 10.5 | J | PG/G | 0.337 | 5.82 | Y |
| SO | CDBS1045_S | CDBS1045S120 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 34465-46-8 | HXCDD | Total HxCDD | 5.93 | J | PG/G | 0.54 | 5.82 | Y |
| SO | CDBS1045_S | CDBS1045S120 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 55684-94-1 | HXCDF | Total HxCDF | 7.22 | J | PG/G | 0.398 | 5.82 | Y |
| SO | CDBS1045_S | CDBS1045S120 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW9060 | GENCHEM | 1-01-2 | TOC | Total Organic Carbon | 511 | J | mg/kg | 33.3 | 100 | Y |
| SO | CDBS1045_S | CDBS1045S120 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 36088-22-9 | PECDD | Total PeCDD | 0.349 | UJ | PG/G | 0.349 | 5.82 | N |
| SO | CDBS1045_S | CDBS1045S120 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 30402-15-4 | PECDF | Total PeCDF | 2.25 | J | PG/G | 0.151 | 5.82 | Y |
| SO | CDBS1045_S | CDBS1045S120 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | A2540B | GENCHEM | TSO | TSO | Total Solids | 77.3 | = | PERCENT | | | Y |
| SO | CDBS1045_S | CDBS1045S120 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 41903-57-5 | TCDD | Total TCDD | 0.216 | UJ | PG/G | 0.216 | 1.16 | N |

APPENDIX C-1

**Soil Washing Data**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| MATRIX | Station ID | Sample ID | Sample Type | Date Collected | Northing | Easting | Upper Depth | Lower Depth | Method | Parameter Class | CAS | Parameter ID | Parameter Name | Conc | Q | Unit | MDL | RL | Detected |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | CDBS1045_S | CDBS1045S120 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 55722-27-5 | TCDF | Total TCDFs | 0.33 | UJ | PG/G | 0.33 | 1.16 | N |
| SO | CDBS1045_S | CDBS1045S120 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 8001-35-2 | TOXAP | Toxaphene | 26 | U | µg/kg | 26 | 26 | N |
| SO | CDBS1045_S | CDBS1045S120 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-62-2 | V | Vanadium | 6.17 | = | mg/kg | 1.29 | 1.29 | Y |
| SO | CDBS1045_S | CDBS1045S120 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-66-6 | ZN | Zinc | 75.3 | = | mg/kg | 6.47 | 6.47 | Y |
| SO | CDBS1045_S | CDBS1045S122 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 35822-46-9 | HPCDD1234678 | 1,2,3,4,6,7,8-HpCDD | 25.3 | J | PG/G | 0.445 | 6.11 | Y |
| SO | CDBS1045_S | CDBS1045S122 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 67562-39-4 | HPCDF1234678 | 1,2,3,4,6,7,8-HpCDF | 4.23 | J | PG/G | 0.147 | 6.11 | Y |
| SO | CDBS1045_S | CDBS1045S122 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 55673-89-7 | HPCDF1234789 | 1,2,3,4,7,8,9-HpCDF | 0.372 | J | PG/G | 0.206 | 6.11 | Y |
| SO | CDBS1045_S | CDBS1045S122 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 39227-28-6 | HXCDD123478 | 1,2,3,4,7,8-HxCDD | 0.284 | J | PG/G | 0.215 | 6.11 | Y |
| SO | CDBS1045_S | CDBS1045S122 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 70648-26-9 | HXCDF123478 | 1,2,3,4,7,8-HxCDF | 0.359 | U | PG/G | 0.137 | 6.11 | N |
| SO | CDBS1045_S | CDBS1045S122 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 57653-85-7 | HXCDD123678 | 1,2,3,6,7,8-HxCDD | 1.66 | J | PG/G | 0.18 | 6.11 | Y |
| SO | CDBS1045_S | CDBS1045S122 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 57117-44-9 | HXCDF123678 | 1,2,3,6,7,8-HxCDF | 0.266 | U | PG/G | 0.116 | 6.11 | N |
| SO | CDBS1045_S | CDBS1045S122 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 19408-74-3 | HXCDD123789 | 1,2,3,7,8,9-HxCDD | 0.684 | U | PG/G | 0.208 | 6.11 | N |
| SO | CDBS1045_S | CDBS1045S122 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 72918-21-9 | HXCDF123789 | 1,2,3,7,8,9-HxCDF | 0.237 | U | PG/G | 0.158 | 6.11 | N |
| SO | CDBS1045_S | CDBS1045S122 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 40321-76-4 | PECDD12378 | 1,2,3,7,8-PeCDD | 0.169 | UJ | PG/G | 0.169 | 6.11 | N |
| SO | CDBS1045_S | CDBS1045S122 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 57117-41-6 | PECDF12378 | 1,2,3,7,8-PeCDF | 0.166 | U | PG/G | 0.0912 | 6.11 | N |
| SO | CDBS1045_S | CDBS1045S122 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 60851-34-5 | HXCDF234678 | 2,3,4,6,7,8-HxCDF | 0.23 | U | PG/G | 0.128 | 6.11 | N |
| SO | CDBS1045_S | CDBS1045S122 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 57117-31-4 | PECDF23478 | 2,3,4,7,8-PeCDF | 0.293 | U | PG/G | 0.0907 | 6.11 | N |
| SO | CDBS1045_S | CDBS1045S122 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 1746-01-6 | TCDD2378 | 2,3,7,8-TCDD | 0.126 | UJ | PG/G | 0.126 | 1.22 | N |
| SO | CDBS1045_S | CDBS1045S122 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 51207-31-9 | TCDF2378 | 2,3,7,8-TCDF | 0.408 | J | PG/G | 0.398 | 1.22 | Y |
| SO | CDBS1045_S | CDBS1045S122 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 72-54-8 | DDD44 | 4,4'-DDD | 1.3 | U | µg/kg | 1.3 | 1.3 | N |
| SO | CDBS1045_S | CDBS1045S122 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 72-55-9 | DDE44 | 4,4'-DDE | 1.3 | U | µg/kg | 1.3 | 1.3 | N |
| SO | CDBS1045_S | CDBS1045S122 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 50-29-3 | DDT44 | 4,4'-DDT | 0.89 | J | µg/kg | 0.44 | 1.3 | Y |
| SO | CDBS1045_S | CDBS1045S122 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 309-00-2 | ALDRIN | Aldrin | 1.3 | U | µg/kg | 1.3 | 1.3 | N |
| SO | CDBS1045_S | CDBS1045S122 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 319-84-6 | BHCALPHA | Alpha-BHC | 1.3 | U | µg/kg | 1.3 | 1.3 | N |
| SO | CDBS1045_S | CDBS1045S122 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 5103-71-9 | CHLORDANEA | Alpha-Chlordane | 1.3 | U | µg/kg | 1.3 | 1.3 | N |
| SO | CDBS1045_S | CDBS1045S122 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-36-0 | SB | Antimony | 0.171 | U | mg/kg | 0.658 | 0.658 | N |
| SO | CDBS1045_S | CDBS1045S122 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 12674-11-2 | PCB1016 | Aroclor 1016 | 13 | U | µg/kg | 13 | 13 | N |
| SO | CDBS1045_S | CDBS1045S122 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 11104-28-2 | PCB1221 | Aroclor 1221 | 13 | U | µg/kg | 13 | 13 | N |
| SO | CDBS1045_S | CDBS1045S122 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 11141-16-5 | PCB1232 | Aroclor 1232 | 13 | U | µg/kg | 13 | 13 | N |
| SO | CDBS1045_S | CDBS1045S122 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 53469-21-9 | PCB1242 | Aroclor 1242 | 13 | U | µg/kg | 13 | 13 | N |
| SO | CDBS1045_S | CDBS1045S122 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 12672-29-6 | PCB1248 | Aroclor 1248 | 13 | U | µg/kg | 13 | 13 | N |
| SO | CDBS1045_S | CDBS1045S122 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 11097-69-1 | PCB1254 | Aroclor 1254 | 13 | U | µg/kg | 13 | 13 | N |
| SO | CDBS1045_S | CDBS1045S122 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 11096-82-5 | PCB1260 | Aroclor 1260 | 13 | U | µg/kg | 13 | 13 | N |
| SO | CDBS1045_S | CDBS1045S122 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 37324-23-5 | PCB1262 | Aroclor 1262 | 13 | U | µg/kg | 13 | 13 | N |
| SO | CDBS1045_S | CDBS1045S122 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-38-2 | AS | Arsenic | 0.881 | = | mg/kg | 0.658 | 0.658 | Y |
| SO | CDBS1045_S | CDBS1045S122 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-39-3 | BA | Barium | 24.4 | = | mg/kg | 0.658 | 0.658 | Y |
| SO | CDBS1045_S | CDBS1045S122 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-41-7 | BE | Beryllium | 0.293 | J | mg/kg | 0.27 | 0.395 | Y |
| SO | CDBS1045_S | CDBS1045S122 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 319-85-7 | BHCBETA | Beta-BHC | 1.3 | U | µg/kg | 1.3 | 1.3 | N |
| SO | CDBS1045_S | CDBS1045S122 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-43-9 | CD | Cadmium | 0.158 | U | mg/kg | 0.263 | 0.263 | N |
| SO | CDBS1045_S | CDBS1045S122 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 57-74-9 | CHLORDANE | Chlordane | 13 | U | µg/kg | 13 | 13 | N |
| SO | CDBS1045_S | CDBS1045S122 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-47-3 | CR | Chromium | 5.67 | = | mg/kg | 1.32 | 1.32 | Y |
| SO | CDBS1045_S | CDBS1045S122 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-48-4 | CO | Cobalt | 2.21 | = | mg/kg | 0.658 | 0.658 | Y |
| SO | CDBS1045_S | CDBS1045S122 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-50-8 | CU | Copper | 2.74 | = | mg/kg | 0.263 | 0.263 | Y |
| SO | CDBS1045_S | CDBS1045S122 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 319-86-8 | BHCDELTA | Delta-BHC | 1.3 | U | µg/kg | 1.3 | 1.3 | N |
| SO | CDBS1045_S | CDBS1045S122 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 60-57-1 | DIELDRIN | Dieldrin | 1.3 | U | µg/kg | 1.3 | 1.3 | N |
| SO | CDBS1045_S | CDBS1045S122 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | M8015D | HC | EFHD (C12-C14) | 4786 | Diesel Range Organics (C12-C14) | 6600 | U | µg/kg | 6600 | 6600 | N |
| SO | CDBS1045_S | CDBS1045S122 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | M8015D | HC | EFHD (C15-C20) | EFHDC15C20 | Diesel Range Organics (C15-C20) | 6600 | U | µg/kg | 6600 | 6600 | N |
| SO | CDBS1045_S | CDBS1045S122 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | M8015D | HC | EFHD (C21-C30) | EFHDC21C30 | Diesel Range Organics (C21-C30) | 3000 | J | µg/kg | 2100 | 6600 | Y |
| SO | CDBS1045_S | CDBS1045S122 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | M8015D | HC | EFHD (C8-C11) | EFHD (C8-C11) | Diesel Range Organics (C8-C11) | 8400 | = | µg/kg | 6600 | 6600 | Y |
| SO | CDBS1045_S | CDBS1045S122 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 959-98-8 | ENDOSULFANA | Endosulfan I | 1.3 | U | µg/kg | 1.3 | 1.3 | N |
| SO | CDBS1045_S | CDBS1045S122 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 33213-65-9 | ENDOSULFANB | Endosulfan II | 1.3 | U | µg/kg | 1.3 | 1.3 | N |
| SO | CDBS1045_S | CDBS1045S122 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 1031-07-8 | ENDOSULFANS | Endosulfan Sulfate | 1.3 | U | µg/kg | 1.3 | 1.3 | N |
| SO | CDBS1045_S | CDBS1045S122 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 72-20-8 | ENDRIN | Endrin | 1.3 | U | µg/kg | 1.3 | 1.3 | N |
| SO | CDBS1045_S | CDBS1045S122 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 7421-93-4 | ENDRINALD | Endrin Aldehyde | 1.3 | U | µg/kg | 1.3 | 1.3 | N |
| SO | CDBS1045_S | CDBS1045S122 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 53494-70-5 | ENDRINKET | Endrin ketone | 1.3 | U | µg/kg | 1.3 | 1.3 | N |
| SO | CDBS1045_S | CDBS1045S122 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 58-89-9 | BHCGAMMA | gamma-BHC | 1.3 | U | µg/kg | 1.3 | 1.3 | N |
| SO | CDBS1045_S | CDBS1045S122 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8015B | HC | GRO C4-C12 | 4541 | GRO (C4-C12) | 950 | = | µg/kg | 650 | 650 | Y |
| SO | CDBS1045_S | CDBS1045S122 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 76-44-8 | HEPTACHLOR | Heptachlor | 1.3 | U | µg/kg | 1.3 | 1.3 | N |
| SO | CDBS1045_S | CDBS1045S122 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 1024-57-3 | HEPT-EPOX | Heptachlor Epoxide | 1.3 | U | µg/kg | 1.3 | 1.3 | N |
| SO | CDBS1045_S | CDBS1045S122 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7439-92-1 | PB | Lead | 4.73 | = | mg/kg | 0.526 | 0.526 | Y |
| SO | CDBS1045_S | CDBS1045S122 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW7471A | INO | 7439-97-6 | HG | Mercury | 0.00799 | U | mg/kg | 0.113 | 0.113 | N |
| SO | CDBS1045_S | CDBS1045S122 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 72-43-5 | MTXYCL | Methoxychlor | 1.3 | U | µg/kg | 1.3 | 1.3 | N |
| SO | CDBS1045_S | CDBS1045S122 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 2385-85-5 | MIREX | Mirex | 1.3 | U | µg/kg | 1.3 | 1.3 | N |
| SO | CDBS1045_S | CDBS1045S122 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7439-98-7 | MO | Molybdenum | 0.0709 | U | mg/kg | 0.132 | 0.132 | N |
| SO | CDBS1045_S | CDBS1045S122 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-02-0 | NI | Nickel | 3.51 | = | mg/kg | 0.526 | 0.526 | Y |
| SO | CDBS1045_S | CDBS1045S122 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 39001-02-0 | OCDF | Octachlorodibenzofuran | 12.2 | J | PG/G | 0.413 | 12.2 | Y |
| SO | CDBS1045_S | CDBS1045S122 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 3268-87-9 | OCDD | Octachlorodibenzo-p-dioxin | 528 | J | PG/G | 0.672 | 12.2 | Y |
| SO | CDBS1045_S | CDBS1045S122 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | M8015D | HC | EFHD (C31-C40) | 4503 | ORO (C31-C40) | 6700 | J | µg/kg | 6600 | 6600 | Y |
| SO | CDBS1045_S | CDBS1045S122 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 11100-14-4 | PCB1268 | PCB-1268 (Aroclor 1268) | 13 | U | µg/kg | 13 | 13 | N |

APPENDIX C-1

**Soil Washing Data**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| MATRIX | Station ID | Sample ID | Sample Type | Date Collected | Northing | Easting | Upper Depth | Lower Depth | Method | Parameter Class | CAS | Parameter ID | Parameter Name | Conc | Q | Unit | MDL | RL | Detected |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | CDBS1045_S | CDBS1045S122 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7782-49-2 | SE | Selenium | 0.347 | U | mg/kg | 1.32 | 1.32 | N |
| SO | CDBS1045_S | CDBS1045S122 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-22-4 | AG | Silver | 0.187 | U | mg/kg | 0.263 | 0.263 | N |
| SO | CDBS1045_S | CDBS1045S122 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-28-0 | TL | Thallium | 0.138 | U | mg/kg | 0.263 | 0.263 | N |
| SO | CDBS1045_S | CDBS1045S122 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 37871-00-4 | HPCDD | Total HpCDD | 85.3 | J | PG/G | 0.445 | 6.11 | Y |
| SO | CDBS1045_S | CDBS1045S122 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 38998-75-3 | HPCDF | Total HpCDF | 12.8 | J | PG/G | 0.147 | 6.11 | Y |
| SO | CDBS1045_S | CDBS1045S122 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 34465-46-8 | HXCDD | Total HxCDD | 10.1 | J | PG/G | 0.18 | 6.11 | Y |
| SO | CDBS1045_S | CDBS1045S122 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 55684-94-1 | HXCDF | Total HxCDF | 9.35 | J | PG/G | 0.116 | 6.11 | Y |
| SO | CDBS1045_S | CDBS1045S122 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW9060 | GENCHEM | 1-01-2 | TOC | Total Organic Carbon | 553 | J | mg/kg | 33.3 | 100 | Y |
| SO | CDBS1045_S | CDBS1045S122 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 36088-22-9 | PECDD | Total PeCDD | 0.169 | UJ | PG/G | 0.169 | 6.11 | N |
| SO | CDBS1045_S | CDBS1045S122 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 30402-15-4 | PECDF | Total PeCDF | 3.78 | J | PG/G | 0.0469 | 6.11 | Y |
| SO | CDBS1045_S | CDBS1045S122 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | A2540B | GENCHEM | TSO | TSO | Total Solids | 76 | = | PERCENT | | | Y |
| SO | CDBS1045_S | CDBS1045S122 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 41903-57-5 | TCDD | Total TCDD | 0.126 | UJ | PG/G | 0.126 | 1.22 | N |
| SO | CDBS1045_S | CDBS1045S122 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 55722-27-5 | TCDF | Total TCDFs | 1.28 | J | PG/G | 0.156 | 1.22 | Y |
| SO | CDBS1045_S | CDBS1045S122 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 8001-35-2 | TOXAP | Toxaphene | 26 | U | µg/kg | 26 | 26 | N |
| SO | CDBS1045_S | CDBS1045S122 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-62-2 | V | Vanadium | 8.08 | = | mg/kg | 1.32 | 1.32 | Y |
| SO | CDBS1045_S | CDBS1045S122 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-66-6 | ZN | Zinc | 24.7 | = | mg/kg | 6.58 | 6.58 | Y |
| SO | CDBS1045_S | CDBS1045S124 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 35822-46-9 | HPCDD1234678 | 1,2,3,4,6,7,8-HpCDD | 15.6 | J | PG/G | 0.253 | 5.76 | Y |
| SO | CDBS1045_S | CDBS1045S124 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 67562-39-4 | HPCDF1234678 | 1,2,3,4,6,7,8-HpCDF | 3.13 | J | PG/G | 0.109 | 5.76 | Y |
| SO | CDBS1045_S | CDBS1045S124 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 55673-89-7 | HPCDF1234789 | 1,2,3,4,7,8,9-HpCDF | 0.184 | J | PG/G | 0.154 | 5.76 | Y |
| SO | CDBS1045_S | CDBS1045S124 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 39227-28-6 | HXCDD123478 | 1,2,3,4,7,8-HxCDD | 0.247 | J | PG/G | 0.161 | 5.76 | Y |
| SO | CDBS1045_S | CDBS1045S124 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 70648-26-9 | HXCDF123478 | 1,2,3,4,7,8-HxCDF | 0.279 | U | PG/G | 0.0841 | 5.76 | N |
| SO | CDBS1045_S | CDBS1045S124 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 57653-85-7 | HXCDD123678 | 1,2,3,6,7,8-HxCDD | 1.22 | J | PG/G | 0.135 | 5.76 | Y |
| SO | CDBS1045_S | CDBS1045S124 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 57117-44-9 | HXCDF123678 | 1,2,3,6,7,8-HxCDF | 0.235 | U | PG/G | 0.0712 | 5.76 | N |
| SO | CDBS1045_S | CDBS1045S124 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 19408-74-3 | HXCDD123789 | 1,2,3,7,8,9-HxCDD | 0.565 | U | PG/G | 0.155 | 5.76 | N |
| SO | CDBS1045_S | CDBS1045S124 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 72918-21-9 | HXCDF123789 | 1,2,3,7,8,9-HxCDF | 0.0972 | UJ | PG/G | 0.0972 | 5.76 | N |
| SO | CDBS1045_S | CDBS1045S124 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 40321-76-4 | PECDD12378 | 1,2,3,7,8-PeCDD | 0.116 | UJ | PG/G | 0.116 | 5.76 | N |
| SO | CDBS1045_S | CDBS1045S124 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 57117-41-6 | PECDF12378 | 1,2,3,7,8-PeCDF | 0.12 | UJ | PG/G | 0.12 | 5.76 | N |
| SO | CDBS1045_S | CDBS1045S124 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 60851-34-5 | HXCDF234678 | 2,3,4,6,7,8-HxCDF | 0.249 | U | PG/G | 0.079 | 5.76 | N |
| SO | CDBS1045_S | CDBS1045S124 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 57117-31-4 | PECDF23478 | 2,3,4,7,8-PeCDF | 0.286 | U | PG/G | 0.119 | 5.76 | N |
| SO | CDBS1045_S | CDBS1045S124 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 1746-01-6 | TCDD2378 | 2,3,7,8-TCDD | 0.0926 | UJ | PG/G | 0.0926 | 1.15 | N |
| SO | CDBS1045_S | CDBS1045S124 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 51207-31-9 | TCDF2378 | 2,3,7,8-TCDF | 0.463 | J | PG/G | 0.403 | 1.15 | Y |
| SO | CDBS1045_S | CDBS1045S124 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 72-54-8 | DDD44 | 4,4'-DDD | 1.3 | U | µg/kg | 1.3 | 1.3 | N |
| SO | CDBS1045_S | CDBS1045S124 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 72-55-9 | DDE44 | 4,4'-DDE | 1.3 | U | µg/kg | 1.3 | 1.3 | N |
| SO | CDBS1045_S | CDBS1045S124 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 50-29-3 | DDT44 | 4,4'-DDT | 0.58 | J | µg/kg | 0.45 | 1.3 | Y |
| SO | CDBS1045_S | CDBS1045S124 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 309-00-2 | ALDRIN | Aldrin | 1.3 | U | µg/kg | 1.3 | 1.3 | N |
| SO | CDBS1045_S | CDBS1045S124 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 319-84-6 | BHCALPHA | Alpha-BHC | 1.3 | U | µg/kg | 1.3 | 1.3 | N |
| SO | CDBS1045_S | CDBS1045S124 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 5103-71-9 | CHLORDANEA | Alpha-Chlordane | 1.3 | U | µg/kg | 1.3 | 1.3 | N |
| SO | CDBS1045_S | CDBS1045S124 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-36-0 | SB | Antimony | 0.176 | U | mg/kg | 0.675 | 0.675 | N |
| SO | CDBS1045_S | CDBS1045S124 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 12674-11-2 | PCB1016 | Aroclor 1016 | 13 | U | µg/kg | 13 | 13 | N |
| SO | CDBS1045_S | CDBS1045S124 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 11104-28-2 | PCB1221 | Aroclor 1221 | 13 | U | µg/kg | 13 | 13 | N |
| SO | CDBS1045_S | CDBS1045S124 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 11141-16-5 | PCB1232 | Aroclor 1232 | 13 | U | µg/kg | 13 | 13 | N |
| SO | CDBS1045_S | CDBS1045S124 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 53469-21-9 | PCB1242 | Aroclor 1242 | 13 | U | µg/kg | 13 | 13 | N |
| SO | CDBS1045_S | CDBS1045S124 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 12672-29-6 | PCB1248 | Aroclor 1248 | 13 | U | µg/kg | 13 | 13 | N |
| SO | CDBS1045_S | CDBS1045S124 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 11097-69-1 | PCB1254 | Aroclor 1254 | 13 | U | µg/kg | 13 | 13 | N |
| SO | CDBS1045_S | CDBS1045S124 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 11096-82-5 | PCB1260 | Aroclor 1260 | 13 | U | µg/kg | 13 | 13 | N |
| SO | CDBS1045_S | CDBS1045S124 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 37324-23-5 | PCB1262 | Aroclor 1262 | 13 | U | µg/kg | 13 | 13 | N |
| SO | CDBS1045_S | CDBS1045S124 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-38-2 | AS | Arsenic | 0.893 | = | mg/kg | 0.675 | 0.675 | Y |
| SO | CDBS1045_S | CDBS1045S124 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-39-3 | BA | Barium | 22.7 | = | mg/kg | 0.675 | 0.675 | Y |
| SO | CDBS1045_S | CDBS1045S124 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-41-7 | BE | Beryllium | 0.277 | U | mg/kg | 0.405 | 0.405 | N |
| SO | CDBS1045_S | CDBS1045S124 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 319-85-7 | BHCBETA | Beta-BHC | 1.3 | U | µg/kg | 1.3 | 1.3 | N |
| SO | CDBS1045_S | CDBS1045S124 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-43-9 | CD | Cadmium | 0.162 | U | mg/kg | 0.27 | 0.27 | N |
| SO | CDBS1045_S | CDBS1045S124 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 57-74-9 | CHLORDANE | Chlordane | 13 | U | µg/kg | 13 | 13 | N |
| SO | CDBS1045_S | CDBS1045S124 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-47-3 | CR | Chromium | 5.99 | = | mg/kg | 1.35 | 1.35 | Y |
| SO | CDBS1045_S | CDBS1045S124 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-48-4 | CO | Cobalt | 3.29 | = | mg/kg | 0.675 | 0.675 | Y |
| SO | CDBS1045_S | CDBS1045S124 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-50-8 | CU | Copper | 2.53 | = | mg/kg | 0.27 | 0.27 | Y |
| SO | CDBS1045_S | CDBS1045S124 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 319-86-8 | BHCDELTA | Delta-BHC | 1.3 | U | µg/kg | 1.3 | 1.3 | N |
| SO | CDBS1045_S | CDBS1045S124 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 60-57-1 | DIELDRIN | Dieldrin | 1.3 | U | µg/kg | 1.3 | 1.3 | N |
| SO | CDBS1045_S | CDBS1045S124 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | M8015D | HC | EFHD (C12-C14) | 4786 | Diesel Range Organics (C12-C14) | 6900 | U | µg/kg | 6900 | 6900 | N |
| SO | CDBS1045_S | CDBS1045S124 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | M8015D | HC | EFHD (C15-C20) | EFHDC15C20 | Diesel Range Organics (C15-C20) | 6900 | U | µg/kg | 6900 | 6900 | N |
| SO | CDBS1045_S | CDBS1045S124 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | M8015D | HC | EFHD (C21-C30) | EFHDC21C30 | Diesel Range Organics (C21-C30) | 2400 | J | µg/kg | 2200 | 6900 | Y |
| SO | CDBS1045_S | CDBS1045S124 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | M8015D | HC | EFHD (C8-C11) | EFHD (C8-C11) | Diesel Range Organics (C8-C11) | 6900 | U | µg/kg | 6900 | 6900 | N |
| SO | CDBS1045_S | CDBS1045S124 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 959-98-8 | ENDOSULFANA | Endosulfan I | 1.3 | U | µg/kg | 1.3 | 1.3 | N |
| SO | CDBS1045_S | CDBS1045S124 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 33213-65-9 | ENDOSULFANB | Endosulfan II | 1.3 | U | µg/kg | 1.3 | 1.3 | N |
| SO | CDBS1045_S | CDBS1045S124 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 1031-07-8 | ENDOSULFANS | Endosulfan Sulfate | 1.3 | U | µg/kg | 1.3 | 1.3 | N |
| SO | CDBS1045_S | CDBS1045S124 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 72-20-8 | ENDRIN | Endrin | 1.3 | U | µg/kg | 1.3 | 1.3 | N |
| SO | CDBS1045_S | CDBS1045S124 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 7421-93-4 | ENDRINALD | Endrin Aldehyde | 1.3 | U | µg/kg | 1.3 | 1.3 | N |
| SO | CDBS1045_S | CDBS1045S124 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 53494-70-5 | ENDRINKET | Endrin ketone | 1.3 | U | µg/kg | 1.3 | 1.3 | N |
| SO | CDBS1045_S | CDBS1045S124 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 58-89-9 | BHCGAMMA | gamma-BHC | 1.3 | U | µg/kg | 1.3 | 1.3 | N |
| SO | CDBS1045_S | CDBS1045S124 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8015B | HC | GRO C4-C12 | 4541 | GRO (C4-C12) | 660 | U | µg/kg | 660 | 660 | N |

APPENDIX C-1

**Soil Washing Data**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| MATRIX | Station ID | Sample ID | Sample Type | Date Collected | Northing | Easting | Upper Depth | Lower Depth | Method | Parameter Class | CAS | Parameter ID | Parameter Name | Conc | Q | Unit | MDL | RL | Detected |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | CDBS1045_S | CDBS1045S124 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 76-44-8 | HEPTACHLOR | Heptachlor | 1.3 | U | µg/kg | 1.3 | 1.3 | N |
| SO | CDBS1045_S | CDBS1045S124 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 1024-57-3 | HEPT-EPOX | Heptachlor Epoxide | 1.3 | U | µg/kg | 1.3 | 1.3 | N |
| SO | CDBS1045_S | CDBS1045S124 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7439-92-1 | PB | Lead | 4.71 | = | mg/kg | 0.54 | 0.54 | Y |
| SO | CDBS1045_S | CDBS1045S124 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW7471A | INO | 7439-97-6 | HG | Mercury | 0.00767 | U | mg/kg | 0.109 | 0.109 | N |
| SO | CDBS1045_S | CDBS1045S124 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 72-43-5 | MTXYCL | Methoxychlor | 1.3 | U | µg/kg | 1.3 | 1.3 | N |
| SO | CDBS1045_S | CDBS1045S124 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 2385-85-5 | MIREX | Mirex | 1.3 | U | µg/kg | 1.3 | 1.3 | N |
| SO | CDBS1045_S | CDBS1045S124 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7439-98-7 | MO | Molybdenum | 0.0705 | U | mg/kg | 0.135 | 0.135 | N |
| SO | CDBS1045_S | CDBS1045S124 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-02-0 | NI | Nickel | 3.63 | = | mg/kg | 0.54 | 0.54 | Y |
| SO | CDBS1045_S | CDBS1045S124 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 39001-02-0 | OCDF | Octachlorodibenzofuran | 8.05 | J | PG/G | 0.267 | 11.5 | Y |
| SO | CDBS1045_S | CDBS1045S124 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 3268-87-9 | OCDD | Octachlorodibenzo-p-dioxin | 239 | J | PG/G | 0.629 | 11.5 | Y |
| SO | CDBS1045_S | CDBS1045S124 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | M8015D | HC | EFHD (C31-C40) | 4503 | ORO (C31-C40) | 4100 | J | µg/kg | 2200 | 6900 | Y |
| SO | CDBS1045_S | CDBS1045S124 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8082 | ARCL | 11100-14-4 | PCB1268 | PCB-1268 (Aroclor 1268) | 13 | U | µg/kg | 13 | 13 | N |
| SO | CDBS1045_S | CDBS1045S124 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7782-49-2 | SE | Selenium | 0.356 | U | mg/kg | 1.35 | 1.35 | N |
| SO | CDBS1045_S | CDBS1045S124 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-22-4 | AG | Silver | 0.192 | U | mg/kg | 0.27 | 0.27 | N |
| SO | CDBS1045_S | CDBS1045S124 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-28-0 | TL | Thallium | 0.142 | U | mg/kg | 0.27 | 0.27 | N |
| SO | CDBS1045_S | CDBS1045S124 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 37871-00-4 | HPCDD | Total HpCDD | 44.7 | J | PG/G | 0.253 | 5.76 | Y |
| SO | CDBS1045_S | CDBS1045S124 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 38998-75-3 | HPCDF | Total HpCDF | 9.14 | J | PG/G | 0.109 | 5.76 | Y |
| SO | CDBS1045_S | CDBS1045S124 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 34465-46-8 | HXCDD | Total HxCDD | 6.44 | J | PG/G | 0.135 | 5.76 | Y |
| SO | CDBS1045_S | CDBS1045S124 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 55684-94-1 | HXCDF | Total HxCDF | 5.89 | J | PG/G | 0.0712 | 5.76 | Y |
| SO | CDBS1045_S | CDBS1045S124 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW9060 | GENCHEM | 1-01-2 | TOC | Total Organic Carbon | 638 | J | mg/kg | 33.3 | 100 | Y |
| SO | CDBS1045_S | CDBS1045S124 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 36088-22-9 | PECDD | Total PeCDD | 0.187 | J | PG/G | 0.116 | 5.76 | Y |
| SO | CDBS1045_S | CDBS1045S124 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 30402-15-4 | PECDF | Total PeCDF | 3.01 | J | PG/G | 0.0452 | 5.76 | Y |
| SO | CDBS1045_S | CDBS1045S124 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | A2540B | GENCHEM | TSO | TSO | Total Solids | 74.1 | = | PERCENT | | | Y |
| SO | CDBS1045_S | CDBS1045S124 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 41903-57-5 | TCDD | Total TCDD | 0.0926 | UJ | PG/G | 0.0926 | 1.15 | N |
| SO | CDBS1045_S | CDBS1045S124 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | 55722-27-5 | TCDF | Total TCDFs | 0.479 | J | PG/G | 0.155 | 1.15 | Y |
| SO | CDBS1045_S | CDBS1045S124 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8081 | OCPEST | 8001-35-2 | TOXAP | Toxaphene | 27 | U | µg/kg | 27 | 27 | N |
| SO | CDBS1045_S | CDBS1045S124 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-62-2 | V | Vanadium | 7.75 | = | mg/kg | 1.35 | 1.35 | Y |
| SO | CDBS1045_S | CDBS1045S124 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW6020 | INO | 7440-66-6 | ZN | Zinc | 178 | = | mg/kg | 6.75 | 6.75 | Y |
| SO | CDBS1045_S | CDBS1045S200 | N | 5/2/2014 | 265693.857 | 1786730.644 | 5 | 11 | M8015D | HC | EFHD (C12-C14) | 4786 | Diesel Range Organics (C12-C14) | 5300 | U | µg/kg | 5300 | 5300 | N |
| SO | CDBS1045_S | CDBS1045S200 | N | 5/2/2014 | 265693.857 | 1786730.644 | 5 | 11 | M8015D | HC | EFHD (C15-C20) | EFHDC15C20 | Diesel Range Organics (C15-C20) | 5300 | U | µg/kg | 5300 | 5300 | N |
| SO | CDBS1045_S | CDBS1045S200 | N | 5/2/2014 | 265693.857 | 1786730.644 | 5 | 11 | M8015D | HC | EFHD (C21-C30) | EFHDC21C30 | Diesel Range Organics (C21-C30) | 3300 | J | µg/kg | 1700 | 5300 | Y |
| SO | CDBS1045_S | CDBS1045S200 | N | 5/2/2014 | 265693.857 | 1786730.644 | 5 | 11 | M8015D | HC | EFHD (C8-C11) | EFHD (C8-C11) | Diesel Range Organics (C8-C11) | 5300 | U | µg/kg | 5300 | 5300 | N |
| SO | CDBS1045_S | CDBS1045S200 | N | 5/2/2014 | 265693.857 | 1786730.644 | 5 | 11 | SW8015B | HC | GRO C4-C12 | 4541 | GRO (C4-C12) | 540 | U | µg/kg | 540 | 540 | N |
| SO | CDBS1045_S | CDBS1045S200 | N | 5/2/2014 | 265693.857 | 1786730.644 | 5 | 11 | M8015D | HC | EFHD (C31-C40) | 4503 | ORO (C31-C40) | 12000 | = | µg/kg | 5300 | 5300 | Y |
| SO | CDBS1045_S | CDBS1045S201 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 72-54-8 | DDD44 | 4,4'-DDD | 1 | U | µg/kg | 1 | 1 | N |
| SO | CDBS1045_S | CDBS1045S201 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 72-55-9 | DDE44 | 4,4'-DDE | 2.1 | J | µg/kg | 1 | 1 | Y |
| SO | CDBS1045_S | CDBS1045S201 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 50-29-3 | DDT44 | 4,4'-DDT | 7.5 | J | µg/kg | 1 | 1 | Y |
| SO | CDBS1045_S | CDBS1045S201 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 309-00-2 | ALDRIN | Aldrin | 1 | U | µg/kg | 1 | 1 | N |
| SO | CDBS1045_S | CDBS1045S201 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 319-84-6 | BHCALPHA | Alpha-BHC | 1 | U | µg/kg | 1 | 1 | N |
| SO | CDBS1045_S | CDBS1045S201 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 5103-71-9 | CHLORDANEA | Alpha-Chlordane | 1 | U | µg/kg | 1 | 1 | N |
| SO | CDBS1045_S | CDBS1045S201 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 319-85-7 | BHCBETA | Beta-BHC | 1 | U | µg/kg | 1 | 1 | N |
| SO | CDBS1045_S | CDBS1045S201 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 57-74-9 | CHLORDANE | Chlordane | 10 | U | µg/kg | 10 | 10 | N |
| SO | CDBS1045_S | CDBS1045S201 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 319-86-8 | BHCDELTA | Delta-BHC | 1 | U | µg/kg | 1 | 1 | N |
| SO | CDBS1045_S | CDBS1045S201 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 60-57-1 | DIELDRIN | Dieldrin | 0.51 | J | µg/kg | 0.33 | 1 | Y |
| SO | CDBS1045_S | CDBS1045S201 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | M8015D | HC | EFHD (C12-C14) | 4786 | Diesel Range Organics (C12-C14) | 5000 | U | µg/kg | 5000 | 5000 | N |
| SO | CDBS1045_S | CDBS1045S201 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | M8015D | HC | EFHD (C15-C20) | EFHDC15C20 | Diesel Range Organics (C15-C20) | 5000 | U | µg/kg | 5000 | 5000 | N |
| SO | CDBS1045_S | CDBS1045S201 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | M8015D | HC | EFHD (C21-C30) | EFHDC21C30 | Diesel Range Organics (C21-C30) | 5000 | U | µg/kg | 5000 | 5000 | N |
| SO | CDBS1045_S | CDBS1045S201 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | M8015D | HC | EFHD (C8-C11) | EFHD (C8-C11) | Diesel Range Organics (C8-C11) | 5000 | U | µg/kg | 5000 | 5000 | N |
| SO | CDBS1045_S | CDBS1045S201 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 959-98-8 | ENDOSULFANA | Endosulfan I | 1 | U | µg/kg | 1 | 1 | N |
| SO | CDBS1045_S | CDBS1045S201 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 33213-65-9 | ENDOSULFANB | Endosulfan II | 1 | U | µg/kg | 1 | 1 | N |
| SO | CDBS1045_S | CDBS1045S201 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 1031-07-8 | ENDOSULFANS | Endosulfan Sulfate | 1 | U | µg/kg | 1 | 1 | N |
| SO | CDBS1045_S | CDBS1045S201 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 72-20-8 | ENDRIN | Endrin | 1 | U | µg/kg | 1 | 1 | N |
| SO | CDBS1045_S | CDBS1045S201 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 7421-93-4 | ENDRINALD | Endrin Aldehyde | 1 | U | µg/kg | 1 | 1 | N |
| SO | CDBS1045_S | CDBS1045S201 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 53494-70-5 | ENDRINKET | Endrin ketone | 1 | U | µg/kg | 1 | 1 | N |
| SO | CDBS1045_S | CDBS1045S201 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 58-89-9 | BHCGAMMA | gamma-BHC | 1 | U | µg/kg | 1 | 1 | N |
| SO | CDBS1045_S | CDBS1045S201 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8015B | HC | GRO C4-C12 | 4541 | GRO (C4-C12) | 500 | U | µg/kg | 500 | 500 | N |
| SO | CDBS1045_S | CDBS1045S201 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 76-44-8 | HEPTACHLOR | Heptachlor | 1 | U | µg/kg | 1 | 1 | N |
| SO | CDBS1045_S | CDBS1045S201 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 1024-57-3 | HEPT-EPOX | Heptachlor Epoxide | 1 | U | µg/kg | 1 | 1 | N |
| SO | CDBS1045_S | CDBS1045S201 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 72-43-5 | MTXYCL | Methoxychlor | 1 | U | µg/kg | 1 | 1 | N |
| SO | CDBS1045_S | CDBS1045S201 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 2385-85-5 | MIREX | Mirex | 1 | U | µg/kg | 1 | 1 | N |
| SO | CDBS1045_S | CDBS1045S201 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | M8015D | HC | EFHD (C31-C40) | 4503 | ORO (C31-C40) | 5000 | U | µg/kg | 5000 | 5000 | N |
| SO | CDBS1045_S | CDBS1045S201 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW9045D | GENCHEM | E-10139 | PH | pH | 7.14 | = | PH UNITS | | | Y |
| SO | CDBS1045_S | CDBS1045S201 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW9060 | GENCHEM | 1-01-2 | TOC | Total Organic Carbon | 2450 | J | mg/kg | 33.3 | 100 | Y |
| SO | CDBS1045_S | CDBS1045S201 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | A2540B | GENCHEM | TSO | TSO | Total Solids | 98.7 | = | PERCENT | | | Y |
| SO | CDBS1045_S | CDBS1045S201 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 8001-35-2 | TOXAP | Toxaphene | 20 | U | µg/kg | 20 | 20 | N |
| SO | CDBS1045_S | CDBS1045S202 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 72-54-8 | DDD44 | 4,4'-DDD | 1.1 | U | µg/kg | 1.1 | 1.1 | N |
| SO | CDBS1045_S | CDBS1045S202 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 72-55-9 | DDE44 | 4,4'-DDE | 1.1 | U | µg/kg | 1.1 | 1.1 | N |
| SO | CDBS1045_S | CDBS1045S202 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 50-29-3 | DDT44 | 4,4'-DDT | 1.1 | U | µg/kg | 1.1 | 1.1 | N |
| SO | CDBS1045_S | CDBS1045S202 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 309-00-2 | ALDRIN | Aldrin | 1.1 | U | µg/kg | 1.1 | 1.1 | N |

APPENDIX C-1

**Soil Washing Data**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| MATRIX | Station ID | Sample ID | Sample Type | Date Collected | Northing | Easting | Upper Depth | Lower Depth | Method | Parameter Class | CAS | Parameter ID | Parameter Name | Conc | Q | Unit | MDL | RL | Detected |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | CDBS1045_S | CDBS1045S202 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 319-84-6 | BHCALPHA | Alpha-BHC | 1.1 | U | µg/kg | 1.1 | 1.1 | N |
| SO | CDBS1045_S | CDBS1045S202 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 5103-71-9 | CHLORDANEA | Alpha-Chlordane | 1.1 | U | µg/kg | 1.1 | 1.1 | N |
| SO | CDBS1045_S | CDBS1045S202 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 319-85-7 | BHCBETA | Beta-BHC | 1.1 | U | µg/kg | 1.1 | 1.1 | N |
| SO | CDBS1045_S | CDBS1045S202 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 57-74-9 | CHLORDANE | Chlordane | 11 | U | µg/kg | 11 | 11 | N |
| SO | CDBS1045_S | CDBS1045S202 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 319-86-8 | BHCDELTA | Delta-BHC | 1.1 | U | µg/kg | 1.1 | 1.1 | N |
| SO | CDBS1045_S | CDBS1045S202 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 60-57-1 | DIELDRIN | Dieldrin | 1.1 | U | µg/kg | 1.1 | 1.1 | N |
| SO | CDBS1045_S | CDBS1045S202 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | M8015D | HC | EFHD (C12-C14) | 4786 | Diesel Range Organics (C12-C14) | 230000 | = | µg/kg | 5400 | 5400 | Y |
| SO | CDBS1045_S | CDBS1045S202 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | M8015D | HC | EFHD (C15-C20) | EFHDC15C20 | Diesel Range Organics (C15-C20) | 250000 | = | µg/kg | 5400 | 5400 | Y |
| SO | CDBS1045_S | CDBS1045S202 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | M8015D | HC | EFHD (C21-C30) | EFHDC21C30 | Diesel Range Organics (C21-C30) | 5400 | U | µg/kg | 5400 | 5400 | N |
| SO | CDBS1045_S | CDBS1045S202 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | M8015D | HC | EFHD (C8-C11) | EFHD (C8-C11) | Diesel Range Organics (C8-C11) | 7500 | = | µg/kg | 5400 | 5400 | Y |
| SO | CDBS1045_S | CDBS1045S202 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 959-98-8 | ENDOSULFANA | Endosulfan I | 1.1 | U | µg/kg | 1.1 | 1.1 | N |
| SO | CDBS1045_S | CDBS1045S202 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 33213-65-9 | ENDOSULFANB | Endosulfan II | 1.1 | U | µg/kg | 1.1 | 1.1 | N |
| SO | CDBS1045_S | CDBS1045S202 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 1031-07-8 | ENDOSULFANS | Endosulfan Sulfate | 1.1 | U | µg/kg | 1.1 | 1.1 | N |
| SO | CDBS1045_S | CDBS1045S202 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 72-20-8 | ENDRIN | Endrin | 1.1 | U | µg/kg | 1.1 | 1.1 | N |
| SO | CDBS1045_S | CDBS1045S202 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 7421-93-4 | ENDRINALD | Endrin Aldehyde | 1.1 | U | µg/kg | 1.1 | 1.1 | N |
| SO | CDBS1045_S | CDBS1045S202 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 53494-70-5 | ENDRINKET | Endrin ketone | 1.1 | U | µg/kg | 1.1 | 1.1 | N |
| SO | CDBS1045_S | CDBS1045S202 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 58-89-9 | BHCGAMMA | gamma-BHC | 1.1 | U | µg/kg | 1.1 | 1.1 | N |
| SO | CDBS1045_S | CDBS1045S202 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8015B | HC | GRO C4-C12 | 4541 | GRO (C4-C12) | 3700 | = | µg/kg | 530 | 530 | Y |
| SO | CDBS1045_S | CDBS1045S202 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 76-44-8 | HEPTACHLOR | Heptachlor | 1.1 | U | µg/kg | 1.1 | 1.1 | N |
| SO | CDBS1045_S | CDBS1045S202 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 1024-57-3 | HEPT-EPOX | Heptachlor Epoxide | 1.1 | U | µg/kg | 1.1 | 1.1 | N |
| SO | CDBS1045_S | CDBS1045S202 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 72-43-5 | MTXYCL | Methoxychlor | 1.1 | U | µg/kg | 1.1 | 1.1 | N |
| SO | CDBS1045_S | CDBS1045S202 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 2385-85-5 | MIREX | Mirex | 1.1 | U | µg/kg | 1.1 | 1.1 | N |
| SO | CDBS1045_S | CDBS1045S202 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | M8015D | HC | EFHD (C31-C40) | 4503 | ORO (C31-C40) | 5400 | U | µg/kg | 5400 | 5400 | N |
| SO | CDBS1045_S | CDBS1045S202 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW9045D | GENCHEM | E-10139 | PH | pH | 6.68 | = | PH UNITS | | | Y |
| SO | CDBS1045_S | CDBS1045S202 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW9081 | INO | 7440-23-5 | NA | Sodium | 20.9 | = | MEQ/0.1KG | 0.292 | 0.292 | Y |
| SO | CDBS1045_S | CDBS1045S202 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW9060 | GENCHEM | 1-01-2 | TOC | Total Organic Carbon | 2030 | J | mg/kg | 33.3 | 100 | Y |
| SO | CDBS1045_S | CDBS1045S202 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | A2540B | GENCHEM | TSO | TSO | Total Solids | 93 | = | PERCENT | | | Y |
| SO | CDBS1045_S | CDBS1045S202 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 8001-35-2 | TOXAP | Toxaphene | 21 | U | µg/kg | 21 | 21 | N |
| SO | CDBS1045_S | CDBS1045S204 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8015B | HC | GRO C4-C12 | 4541 | GRO (C4-C12) | 1200 | = | µg/kg | 570 | 570 | Y |
| SO | CDBS1045_S | CDBS1045S204 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | A2540B | GENCHEM | TSO | TSO | Total Solids | 88.9 | = | PERCENT | | | Y |
| SO | CDBS1045_S | CDBS1045S205 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 72-54-8 | DDD44 | 4,4'-DDD | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S205 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 72-55-9 | DDE44 | 4,4'-DDE | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S205 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 50-29-3 | DDT44 | 4,4'-DDT | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S205 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 309-00-2 | ALDRIN | Aldrin | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S205 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 319-84-6 | BHCALPHA | Alpha-BHC | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S205 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 5103-71-9 | CHLORDANEA | Alpha-Chlordane | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S205 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 319-85-7 | BHCBETA | Beta-BHC | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S205 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 57-74-9 | CHLORDANE | Chlordane | 12 | U | µg/kg | 12 | 12 | N |
| SO | CDBS1045_S | CDBS1045S205 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 319-86-8 | BHCDELTA | Delta-BHC | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S205 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 60-57-1 | DIELDRIN | Dieldrin | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S205 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | M8015D | HC | EFHD (C12-C14) | 4786 | Diesel Range Organics (C12-C14) | 37000 | = | µg/kg | 6200 | 6200 | Y |
| SO | CDBS1045_S | CDBS1045S205 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | M8015D | HC | EFHD (C15-C20) | EFHDC15C20 | Diesel Range Organics (C15-C20) | 21000 | = | µg/kg | 6200 | 6200 | Y |
| SO | CDBS1045_S | CDBS1045S205 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | M8015D | HC | EFHD (C21-C30) | EFHDC21C30 | Diesel Range Organics (C21-C30) | 6200 | U | µg/kg | 6200 | 6200 | N |
| SO | CDBS1045_S | CDBS1045S205 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | M8015D | HC | EFHD (C8-C11) | EFHD (C8-C11) | Diesel Range Organics (C8-C11) | 2600 | J | µg/kg | 2000 | 6200 | Y |
| SO | CDBS1045_S | CDBS1045S205 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 959-98-8 | ENDOSULFANA | Endosulfan I | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S205 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 33213-65-9 | ENDOSULFANB | Endosulfan II | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S205 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 1031-07-8 | ENDOSULFANS | Endosulfan Sulfate | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S205 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 72-20-8 | ENDRIN | Endrin | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S205 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 7421-93-4 | ENDRINALD | Endrin Aldehyde | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S205 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 53494-70-5 | ENDRINKET | Endrin ketone | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S205 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 58-89-9 | BHCGAMMA | gamma-BHC | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S205 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8015B | HC | GRO C4-C12 | 4541 | GRO (C4-C12) | 1100 | = | µg/kg | 620 | 620 | Y |
| SO | CDBS1045_S | CDBS1045S205 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 76-44-8 | HEPTACHLOR | Heptachlor | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S205 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 1024-57-3 | HEPT-EPOX | Heptachlor Epoxide | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S205 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 72-43-5 | MTXYCL | Methoxychlor | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S205 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 2385-85-5 | MIREX | Mirex | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S205 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | M8015D | HC | EFHD (C31-C40) | 4503 | ORO (C31-C40) | 6200 | U | µg/kg | 6200 | 6200 | N |
| SO | CDBS1045_S | CDBS1045S205 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | A2540B | GENCHEM | TSO | TSO | Total Solids | 80.3 | = | PERCENT | | | Y |
| SO | CDBS1045_S | CDBS1045S205 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 8001-35-2 | TOXAP | Toxaphene | 25 | U | µg/kg | 25 | 25 | N |
| SO | CDBS1045_S | CDBS1045S206 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 72-54-8 | DDD44 | 4,4'-DDD | 1.4 | U | µg/kg | 1.4 | 1.4 | N |
| SO | CDBS1045_S | CDBS1045S206 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 72-55-9 | DDE44 | 4,4'-DDE | 1.4 | U | µg/kg | 1.4 | 1.4 | N |
| SO | CDBS1045_S | CDBS1045S206 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 50-29-3 | DDT44 | 4,4'-DDT | 1.4 | U | µg/kg | 1.4 | 1.4 | N |
| SO | CDBS1045_S | CDBS1045S206 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 309-00-2 | ALDRIN | Aldrin | 1.4 | U | µg/kg | 1.4 | 1.4 | N |
| SO | CDBS1045_S | CDBS1045S206 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 319-84-6 | BHCALPHA | Alpha-BHC | 1.4 | U | µg/kg | 1.4 | 1.4 | N |
| SO | CDBS1045_S | CDBS1045S206 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 5103-71-9 | CHLORDANEA | Alpha-Chlordane | 1.4 | U | µg/kg | 1.4 | 1.4 | N |
| SO | CDBS1045_S | CDBS1045S206 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 319-85-7 | BHCBETA | Beta-BHC | 1.4 | U | µg/kg | 1.4 | 1.4 | N |
| SO | CDBS1045_S | CDBS1045S206 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 57-74-9 | CHLORDANE | Chlordane | 14 | U | µg/kg | 14 | 14 | N |
| SO | CDBS1045_S | CDBS1045S206 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 319-86-8 | BHCDELTA | Delta-BHC | 1.4 | U | µg/kg | 1.4 | 1.4 | N |
| SO | CDBS1045_S | CDBS1045S206 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 60-57-1 | DIELDRIN | Dieldrin | 1.4 | U | µg/kg | 1.4 | 1.4 | N |

APPENDIX C-1

**Soil Washing Data**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| MATRIX | Station ID | Sample ID | Sample Type | Date Collected | Northing | Easting | Upper Depth | Lower Depth | Method | Parameter Class | CAS | Parameter ID | Parameter Name | Conc | Q | Unit | MDL | RL | Detected |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | CDBS1045_S | CDBS1045S206 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | M8015D | HC | EFHD (C12-C14) | 4786 | Diesel Range Organics (C12-C14) | 190000 | = | µg/kg | 7000 | 7000 | Y |
| SO | CDBS1045_S | CDBS1045S206 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | M8015D | HC | EFHD (C15-C20) | EFHDC15C20 | Diesel Range Organics (C15-C20) | 100000 | = | µg/kg | 7000 | 7000 | Y |
| SO | CDBS1045_S | CDBS1045S206 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | M8015D | HC | EFHD (C21-C30) | EFHDC21C30 | Diesel Range Organics (C21-C30) | 7000 | U | µg/kg | 7000 | 7000 | N |
| SO | CDBS1045_S | CDBS1045S206 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | M8015D | HC | EFHD (C8-C11) | EFHD (C8-C11) | Diesel Range Organics (C8-C11) | 16000 | = | µg/kg | 7000 | 7000 | Y |
| SO | CDBS1045_S | CDBS1045S206 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 959-98-8 | ENDOSULFANA | Endosulfan I | 1.4 | U | µg/kg | 1.4 | 1.4 | N |
| SO | CDBS1045_S | CDBS1045S206 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 33213-65-9 | ENDOSULFANB | Endosulfan II | 1.4 | U | µg/kg | 1.4 | 1.4 | N |
| SO | CDBS1045_S | CDBS1045S206 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 1031-07-8 | ENDOSULFANS | Endosulfan Sulfate | 1.4 | U | µg/kg | 1.4 | 1.4 | N |
| SO | CDBS1045_S | CDBS1045S206 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 72-20-8 | ENDRIN | Endrin | 1.4 | U | µg/kg | 1.4 | 1.4 | N |
| SO | CDBS1045_S | CDBS1045S206 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 7421-93-4 | ENDRINALD | Endrin Aldehyde | 1.4 | U | µg/kg | 1.4 | 1.4 | N |
| SO | CDBS1045_S | CDBS1045S206 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 53494-70-5 | ENDRINKET | Endrin ketone | 1.4 | U | µg/kg | 1.4 | 1.4 | N |
| SO | CDBS1045_S | CDBS1045S206 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 58-89-9 | BHCGAMMA | gamma-BHC | 1.4 | U | µg/kg | 1.4 | 1.4 | N |
| SO | CDBS1045_S | CDBS1045S206 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8015B | HC | GRO C4-C12 | 4541 | GRO (C4-C12) | 49000 | = | µg/kg | 680 | 680 | Y |
| SO | CDBS1045_S | CDBS1045S206 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 76-44-8 | HEPTACHLOR | Heptachlor | 1.4 | U | µg/kg | 680 | 1.4 | N |
| SO | CDBS1045_S | CDBS1045S206 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 1024-57-3 | HEPT-EPOX | Heptachlor Epoxide | 1.4 | U | µg/kg | 1.4 | 1.4 | N |
| SO | CDBS1045_S | CDBS1045S206 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 72-43-5 | MTXYCL | Methoxychlor | 1.4 | U | µg/kg | 1.4 | 1.4 | N |
| SO | CDBS1045_S | CDBS1045S206 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 2385-85-5 | MIREX | Mirex | 1.4 | U | µg/kg | 1.4 | 1.4 | N |
| SO | CDBS1045_S | CDBS1045S206 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | M8015D | HC | EFHD (C31-C40) | 4503 | ORO (C31-C40) | 7000 | U | µg/kg | 7000 | 7000 | N |
| SO | CDBS1045_S | CDBS1045S206 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW9060 | GENCHEM | 1-01-2 | TOC | Total Organic Carbon | 6000 | J | mg/kg | 33.3 | 100 | Y |
| SO | CDBS1045_S | CDBS1045S206 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | A2540B | GENCHEM | TSO | TSO | Total Solids | 70.1 | = | PERCENT | | | Y |
| SO | CDBS1045_S | CDBS1045S206 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 8001-35-2 | TOXAP | Toxaphene | 29 | U | µg/kg | 29 | 29 | N |
| SO | CDBS1045_S | CDBS1045S208 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | A2540B | GENCHEM | TSO | TSO | Total Solids | 94.5 | = | PERCENT | | | Y |
| SO | CDBS1045_S | CDBS1045S209 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 72-54-8 | DDD44 | 4,4'-DDD | 1.1 | U | µg/kg | 1.1 | 1.1 | N |
| SO | CDBS1045_S | CDBS1045S209 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 72-55-9 | DDE44 | 4,4'-DDE | 1.1 | U | µg/kg | 1.1 | 1.1 | N |
| SO | CDBS1045_S | CDBS1045S209 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 50-29-3 | DDT44 | 4,4'-DDT | 1.1 | U | µg/kg | 1.1 | 1.1 | N |
| SO | CDBS1045_S | CDBS1045S209 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 309-00-2 | ALDRIN | Aldrin | 1.1 | U | µg/kg | 1.1 | 1.1 | N |
| SO | CDBS1045_S | CDBS1045S209 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 319-84-6 | BHCALPHA | Alpha-BHC | 1.1 | U | µg/kg | 1.1 | 1.1 | N |
| SO | CDBS1045_S | CDBS1045S209 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 5103-71-9 | CHLORDANEA | Alpha-Chlordane | 1.1 | U | µg/kg | 1.1 | 1.1 | N |
| SO | CDBS1045_S | CDBS1045S209 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 319-85-7 | BHCBETA | Beta-BHC | 1.1 | U | µg/kg | 1.1 | 1.1 | N |
| SO | CDBS1045_S | CDBS1045S209 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 57-74-9 | CHLORDANE | Chlordane | 11 | U | µg/kg | 11 | 11 | N |
| SO | CDBS1045_S | CDBS1045S209 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 319-86-8 | BHCDELTA | Delta-BHC | 1.1 | U | µg/kg | 1.1 | 1.1 | N |
| SO | CDBS1045_S | CDBS1045S209 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 60-57-1 | DIELDRIN | Dieldrin | 1.1 | U | µg/kg | 1.1 | 1.1 | N |
| SO | CDBS1045_S | CDBS1045S209 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | M8015D | HC | EFHD (C12-C14) | 4786 | Diesel Range Organics (C12-C14) | 470000 | = | µg/kg | 5400 | 5400 | Y |
| SO | CDBS1045_S | CDBS1045S209 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | M8015D | HC | EFHD (C15-C20) | EFHDC15C20 | Diesel Range Organics (C15-C20) | 390000 | = | µg/kg | 5400 | 5400 | Y |
| SO | CDBS1045_S | CDBS1045S209 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | M8015D | HC | EFHD (C21-C30) | EFHDC21C30 | Diesel Range Organics (C21-C30) | 5400 | U | µg/kg | 5400 | 5400 | N |
| SO | CDBS1045_S | CDBS1045S209 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | M8015D | HC | EFHD (C8-C11) | EFHD (C8-C11) | Diesel Range Organics (C8-C11) | 24000 | = | µg/kg | 5400 | 5400 | Y |
| SO | CDBS1045_S | CDBS1045S209 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 959-98-8 | ENDOSULFANA | Endosulfan I | 1.1 | U | µg/kg | 1.1 | 1.1 | N |
| SO | CDBS1045_S | CDBS1045S209 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 33213-65-9 | ENDOSULFANB | Endosulfan II | 1.1 | U | µg/kg | 1.1 | 1.1 | N |
| SO | CDBS1045_S | CDBS1045S209 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 1031-07-8 | ENDOSULFANS | Endosulfan Sulfate | 1.1 | U | µg/kg | 1.1 | 1.1 | N |
| SO | CDBS1045_S | CDBS1045S209 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 72-20-8 | ENDRIN | Endrin | 1.1 | U | µg/kg | 1.1 | 1.1 | N |
| SO | CDBS1045_S | CDBS1045S209 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 7421-93-4 | ENDRINALD | Endrin Aldehyde | 1.1 | U | µg/kg | 1.1 | 1.1 | N |
| SO | CDBS1045_S | CDBS1045S209 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 53494-70-5 | ENDRINKET | Endrin ketone | 1.1 | U | µg/kg | 1.1 | 1.1 | N |
| SO | CDBS1045_S | CDBS1045S209 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 58-89-9 | BHCGAMMA | gamma-BHC | 1.1 | U | µg/kg | 1.1 | 1.1 | N |
| SO | CDBS1045_S | CDBS1045S209 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8015B | HC | GRO C4-C12 | 4541 | GRO (C4-C12) | 10000 | = | µg/kg | 540 | 540 | Y |
| SO | CDBS1045_S | CDBS1045S209 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 76-44-8 | HEPTACHLOR | Heptachlor | 1.1 | U | µg/kg | 1.1 | 1.1 | N |
| SO | CDBS1045_S | CDBS1045S209 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 1024-57-3 | HEPT-EPOX | Heptachlor Epoxide | 1.1 | U | µg/kg | 1.1 | 1.1 | N |
| SO | CDBS1045_S | CDBS1045S209 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 72-43-5 | MTXYCL | Methoxychlor | 1.1 | U | µg/kg | 1.1 | 1.1 | N |
| SO | CDBS1045_S | CDBS1045S209 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 2385-85-5 | MIREX | Mirex | 1.1 | U | µg/kg | 1.1 | 1.1 | N |
| SO | CDBS1045_S | CDBS1045S209 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | M8015D | HC | EFHD (C31-C40) | 4503 | ORO (C31-C40) | 5400 | U | µg/kg | 5400 | 5400 | N |
| SO | CDBS1045_S | CDBS1045S209 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW9060 | GENCHEM | 1-01-2 | TOC | Total Organic Carbon | 2130 | J | mg/kg | 33.3 | 100 | Y |
| SO | CDBS1045_S | CDBS1045S209 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | A2540B | GENCHEM | TSO | TSO | Total Solids | 93.3 | = | PERCENT | | | Y |
| SO | CDBS1045_S | CDBS1045S209 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 8001-35-2 | TOXAP | Toxaphene | 22 | U | µg/kg | 22 | 22 | N |
| SO | CDBS1045_S | CDBS1045S211 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 72-54-8 | DDD44 | 4,4'-DDD | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S211 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 72-55-9 | DDE44 | 4,4'-DDE | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S211 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 50-29-3 | DDT44 | 4,4'-DDT | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S211 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 309-00-2 | ALDRIN | Aldrin | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S211 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 319-84-6 | BHCALPHA | Alpha-BHC | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S211 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 5103-71-9 | CHLORDANEA | Alpha-Chlordane | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S211 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 319-85-7 | BHCBETA | Beta-BHC | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S211 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 57-74-9 | CHLORDANE | Chlordane | 12 | U | µg/kg | 12 | 12 | N |
| SO | CDBS1045_S | CDBS1045S211 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 319-86-8 | BHCDELTA | Delta-BHC | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S211 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 60-57-1 | DIELDRIN | Dieldrin | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S211 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | M8015D | HC | EFHD (C12-C14) | 4786 | Diesel Range Organics (C12-C14) | 24000 | = | µg/kg | 6100 | 6100 | Y |
| SO | CDBS1045_S | CDBS1045S211 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | M8015D | HC | EFHD (C15-C20) | EFHDC15C20 | Diesel Range Organics (C15-C20) | 19000 | = | µg/kg | 6100 | 6100 | Y |
| SO | CDBS1045_S | CDBS1045S211 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | M8015D | HC | EFHD (C21-C30) | EFHDC21C30 | Diesel Range Organics (C21-C30) | 6100 | U | µg/kg | 6100 | 6100 | N |
| SO | CDBS1045_S | CDBS1045S211 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | M8015D | HC | EFHD (C8-C11) | EFHD (C8-C11) | Diesel Range Organics (C8-C11) | 6100 | U | µg/kg | 6100 | 6100 | N |
| SO | CDBS1045_S | CDBS1045S211 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 959-98-8 | ENDOSULFANA | Endosulfan I | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S211 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 33213-65-9 | ENDOSULFANB | Endosulfan II | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S211 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 1031-07-8 | ENDOSULFANS | Endosulfan Sulfate | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S211 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 72-20-8 | ENDRIN | Endrin | 1.2 | U | µg/kg | 1.2 | 1.2 | N |

APPENDIX C-1

**Soil Washing Data**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| MATRIX | Station ID | Sample ID | Sample Type | Date Collected | Northing | Easting | Upper Depth | Lower Depth | Method | Parameter Class | CAS | Parameter ID | Parameter Name | Conc | Q | Unit | MDL | RL | Detected |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | CDBS1045_S | CDBS1045S211 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 7421-93-4 | ENDRINALD | Endrin Aldehyde | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S211 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 53494-70-5 | ENDRINKET | Endrin ketone | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S211 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 58-89-9 | BHCGAMMA | gamma-BHC | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S211 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8015B | HC | GRO C4-C12 | 4541 | GRO (C4-C12) | 520 | J | µg/kg | 160 | 620 | Y |
| SO | CDBS1045_S | CDBS1045S211 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 76-44-8 | HEPTACHLOR | Heptachlor | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S211 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 1024-57-3 | HEPT-EPOX | Heptachlor Epoxide | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S211 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 72-43-5 | MTXYCL | Methoxychlor | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S211 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 2385-85-5 | MIREX | Mirex | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S211 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | M8015D | HC | EFHD (C31-C40) | 4503 | ORO (C31-C40) | 6100 | U | µg/kg | 6100 | 6100 | N |
| SO | CDBS1045_S | CDBS1045S211 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW9060 | GENCHEM | 1-01-2 | TOC | Total Organic Carbon | 552 | J | mg/kg | 33.3 | 100 | Y |
| SO | CDBS1045_S | CDBS1045S211 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | A2540B | GENCHEM | TSO | TSO | Total Solids | 81.6 | = | PERCENT | | | Y |
| SO | CDBS1045_S | CDBS1045S211 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 8001-35-2 | TOXAP | Toxaphene | 25 | U | µg/kg | 25 | 25 | N |
| SO | CDBS1045_S | CDBS1045S212 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 72-54-8 | DDD44 | 4,4'-DDD | 1.6 | U | µg/kg | 1.6 | 1.6 | N |
| SO | CDBS1045_S | CDBS1045S212 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 72-55-9 | DDE44 | 4,4'-DDE | 1.6 | U | µg/kg | 1.6 | 1.6 | N |
| SO | CDBS1045_S | CDBS1045S212 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 50-29-3 | DDT44 | 4,4'-DDT | 1.6 | U | µg/kg | 1.6 | 1.6 | N |
| SO | CDBS1045_S | CDBS1045S212 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 309-00-2 | ALDRIN | Aldrin | 1.6 | U | µg/kg | 1.6 | 1.6 | N |
| SO | CDBS1045_S | CDBS1045S212 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 319-84-6 | BHCALPHA | Alpha-BHC | 1.6 | U | µg/kg | 1.6 | 1.6 | N |
| SO | CDBS1045_S | CDBS1045S212 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 5103-71-9 | CHLORDANEA | Alpha-Chlordane | 1.6 | U | µg/kg | 1.6 | 1.6 | N |
| SO | CDBS1045_S | CDBS1045S212 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 319-85-7 | BHCBETA | Beta-BHC | 1.6 | U | µg/kg | 1.6 | 1.6 | N |
| SO | CDBS1045_S | CDBS1045S212 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 57-74-9 | CHLORDANE | Chlordane | 16 | U | µg/kg | 16 | 16 | N |
| SO | CDBS1045_S | CDBS1045S212 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 319-86-8 | BHCDELTA | Delta-BHC | 1.6 | U | µg/kg | 1.6 | 1.6 | N |
| SO | CDBS1045_S | CDBS1045S212 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 60-57-1 | DIELDRIN | Dieldrin | 1.6 | U | µg/kg | 1.6 | 1.6 | N |
| SO | CDBS1045_S | CDBS1045S212 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | M8015D | HC | EFHD (C12-C14) | 4786 | Diesel Range Organics (C12-C14) | 64000 | = | µg/kg | 7900 | 7900 | Y |
| SO | CDBS1045_S | CDBS1045S212 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | M8015D | HC | EFHD (C15-C20) | EFHDC15C20 | Diesel Range Organics (C15-C20) | 43000 | = | µg/kg | 7900 | 7900 | Y |
| SO | CDBS1045_S | CDBS1045S212 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | M8015D | HC | EFHD (C21-C30) | EFHDC21C30 | Diesel Range Organics (C21-C30) | 7900 | U | µg/kg | 7900 | 7900 | N |
| SO | CDBS1045_S | CDBS1045S212 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | M8015D | HC | EFHD (C8-C11) | EFHD (C8-C11) | Diesel Range Organics (C8-C11) | 3700 | J | µg/kg | 2500 | 7900 | Y |
| SO | CDBS1045_S | CDBS1045S212 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 959-98-8 | ENDOSULFANA | Endosulfan I | 1.6 | U | µg/kg | 1.6 | 1.6 | N |
| SO | CDBS1045_S | CDBS1045S212 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 33213-65-9 | ENDOSULFANB | Endosulfan II | 1.6 | U | µg/kg | 1.6 | 1.6 | N |
| SO | CDBS1045_S | CDBS1045S212 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 1031-07-8 | ENDOSULFANS | Endosulfan Sulfate | 1.6 | U | µg/kg | 1.6 | 1.6 | N |
| SO | CDBS1045_S | CDBS1045S212 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 72-20-8 | ENDRIN | Endrin | 1.6 | U | µg/kg | 1.6 | 1.6 | N |
| SO | CDBS1045_S | CDBS1045S212 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 7421-93-4 | ENDRINALD | Endrin Aldehyde | 1.6 | U | µg/kg | 1.6 | 1.6 | N |
| SO | CDBS1045_S | CDBS1045S212 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 53494-70-5 | ENDRINKET | Endrin ketone | 1.6 | U | µg/kg | 1.6 | 1.6 | N |
| SO | CDBS1045_S | CDBS1045S212 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 58-89-9 | BHCGAMMA | gamma-BHC | 1.6 | U | µg/kg | 1.6 | 1.6 | N |
| SO | CDBS1045_S | CDBS1045S212 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8015B | HC | GRO C4-C12 | 4541 | GRO (C4-C12) | 53000 | = | µg/kg | 820 | 820 | Y |
| SO | CDBS1045_S | CDBS1045S212 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 76-44-8 | HEPTACHLOR | Heptachlor | 1.6 | U | µg/kg | 1.6 | 1.6 | N |
| SO | CDBS1045_S | CDBS1045S212 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 1024-57-3 | HEPT-EPOX | Heptachlor Epoxide | 1.6 | U | µg/kg | 1.6 | 1.6 | N |
| SO | CDBS1045_S | CDBS1045S212 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 72-43-5 | MTXYCL | Methoxychlor | 1.6 | U | µg/kg | 1.6 | 1.6 | N |
| SO | CDBS1045_S | CDBS1045S212 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 2385-85-5 | MIREX | Mirex | 1.6 | U | µg/kg | 1.6 | 1.6 | N |
| SO | CDBS1045_S | CDBS1045S212 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | M8015D | HC | EFHD (C31-C40) | 4503 | ORO (C31-C40) | 7900 | U | µg/kg | 7900 | 7900 | N |
| SO | CDBS1045_S | CDBS1045S212 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW9060 | GENCHEM | 1-01-2 | TOC | Total Organic Carbon | 6600 | J | mg/kg | 33.3 | 100 | Y |
| SO | CDBS1045_S | CDBS1045S212 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | A2540B | GENCHEM | TSO | TSO | Total Solids | 62.4 | = | PERCENT | | | Y |
| SO | CDBS1045_S | CDBS1045S212 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 8001-35-2 | TOXAP | Toxaphene | 32 | U | µg/kg | 32 | 32 | N |
| SO | CDBS1045_S | CDBS1045S213 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 72-54-8 | DDD44 | 4,4'-DDD | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S213 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 72-55-9 | DDE44 | 4,4'-DDE | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S213 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 50-29-3 | DDT44 | 4,4'-DDT | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S213 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 309-00-2 | ALDRIN | Aldrin | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S213 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 319-84-6 | BHCALPHA | Alpha-BHC | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S213 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 5103-71-9 | CHLORDANEA | Alpha-Chlordane | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S213 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 319-85-7 | BHCBETA | Beta-BHC | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S213 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 57-74-9 | CHLORDANE | Chlordane | 12 | U | µg/kg | 12 | 12 | N |
| SO | CDBS1045_S | CDBS1045S213 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 319-86-8 | BHCDELTA | Delta-BHC | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S213 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 60-57-1 | DIELDRIN | Dieldrin | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S213 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | M8015D | HC | EFHD (C12-C14) | 4786 | Diesel Range Organics (C12-C14) | 23000 | J | µg/kg | 6100 | 6100 | Y |
| SO | CDBS1045_S | CDBS1045S213 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | M8015D | HC | EFHD (C15-C20) | EFHDC15C20 | Diesel Range Organics (C15-C20) | 18000 | J | µg/kg | 6100 | 6100 | Y |
| SO | CDBS1045_S | CDBS1045S213 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | M8015D | HC | EFHD (C21-C30) | EFHDC21C30 | Diesel Range Organics (C21-C30) | 6100 | U | µg/kg | 6100 | 6100 | N |
| SO | CDBS1045_S | CDBS1045S213 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | M8015D | HC | EFHD (C8-C11) | EFHD (C8-C11) | Diesel Range Organics (C8-C11) | 6100 | U | µg/kg | 6100 | 6100 | N |
| SO | CDBS1045_S | CDBS1045S213 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 959-98-8 | ENDOSULFANA | Endosulfan I | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S213 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 33213-65-9 | ENDOSULFANB | Endosulfan II | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S213 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 1031-07-8 | ENDOSULFANS | Endosulfan Sulfate | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S213 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 72-20-8 | ENDRIN | Endrin | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S213 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 7421-93-4 | ENDRINALD | Endrin Aldehyde | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S213 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 53494-70-5 | ENDRINKET | Endrin ketone | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S213 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 58-89-9 | BHCGAMMA | gamma-BHC | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S213 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8015B | HC | GRO C4-C12 | 4541 | GRO (C4-C12) | 620 | U | µg/kg | 620 | 620 | N |
| SO | CDBS1045_S | CDBS1045S213 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 76-44-8 | HEPTACHLOR | Heptachlor | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S213 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 1024-57-3 | HEPT-EPOX | Heptachlor Epoxide | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S213 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 72-43-5 | MTXYCL | Methoxychlor | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S213 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 2385-85-5 | MIREX | Mirex | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S213 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | M8015D | HC | EFHD (C31-C40) | 4503 | ORO (C31-C40) | 6100 | U | µg/kg | 6100 | 6100 | N |

APPENDIX C-1

**Soil Washing Data**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| MATRIX | Station ID | Sample ID | Sample Type | Date Collected | Northing | Easting | Upper Depth | Lower Depth | Method | Parameter Class | CAS | Parameter ID | Parameter Name | Conc | Q | Unit | MDL | RL | Detected |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | CDBS1045_S | CDBS1045S213 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW9060 | GENCHEM | 1-01-2 | TOC | Total Organic Carbon | 359 | J | mg/kg | 33.3 | 100 | Y |
| SO | CDBS1045_S | CDBS1045S213 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | A2540B | GENCHEM | TSO | TSO | Total Solids | 81.7 | = | PERCENT | | | Y |
| SO | CDBS1045_S | CDBS1045S213 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 8001-35-2 | TOXAP | Toxaphene | 25 | U | µg/kg | 25 | 25 | N |
| SO | CDBS1045_S | CDBS1045S214 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 72-54-8 | DDD44 | 4,4'-DDD | 1.7 | U | µg/kg | 1.7 | 1.7 | N |
| SO | CDBS1045_S | CDBS1045S214 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 72-55-9 | DDE44 | 4,4'-DDE | 1.7 | U | µg/kg | 1.7 | 1.7 | N |
| SO | CDBS1045_S | CDBS1045S214 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 50-29-3 | DDT44 | 4,4'-DDT | 1.7 | U | µg/kg | 1.7 | 1.7 | N |
| SO | CDBS1045_S | CDBS1045S214 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 309-00-2 | ALDRIN | Aldrin | 1.7 | U | µg/kg | 1.7 | 1.7 | N |
| SO | CDBS1045_S | CDBS1045S214 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 319-84-6 | BHCALPHA | Alpha-BHC | 1.7 | U | µg/kg | 1.7 | 1.7 | N |
| SO | CDBS1045_S | CDBS1045S214 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 5103-71-9 | CHLORDANEA | Alpha-Chlordane | 1.7 | U | µg/kg | 1.7 | 1.7 | N |
| SO | CDBS1045_S | CDBS1045S214 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 319-85-7 | BHCBETA | Beta-BHC | 1.7 | U | µg/kg | 1.7 | 1.7 | N |
| SO | CDBS1045_S | CDBS1045S214 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 57-74-9 | CHLORDANE | Chlordane | 17 | U | µg/kg | 17 | 17 | N |
| SO | CDBS1045_S | CDBS1045S214 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 319-86-8 | BHCDELTA | Delta-BHC | 1.7 | U | µg/kg | 1.7 | 1.7 | N |
| SO | CDBS1045_S | CDBS1045S214 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 60-57-1 | DIELDRIN | Dieldrin | 1.7 | U | µg/kg | 1.7 | 1.7 | N |
| SO | CDBS1045_S | CDBS1045S214 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | M8015D | HC | EFHD (C12-C14) | 4786 | Diesel Range Organics (C12-C14) | 5900 | J | µg/kg | 2700 | 8500 | Y |
| SO | CDBS1045_S | CDBS1045S214 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | M8015D | HC | EFHD (C15-C20) | EFHDC15C20 | Diesel Range Organics (C15-C20) | 7700 | J | µg/kg | 2700 | 8500 | Y |
| SO | CDBS1045_S | CDBS1045S214 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | M8015D | HC | EFHD (C21-C30) | EFHDC21C30 | Diesel Range Organics (C21-C30) | 8500 | U | µg/kg | 8500 | 8500 | N |
| SO | CDBS1045_S | CDBS1045S214 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | M8015D | HC | EFHD (C8-C11) | EFHD (C8-C11) | Diesel Range Organics (C8-C11) | 8500 | U | µg/kg | 8500 | 8500 | N |
| SO | CDBS1045_S | CDBS1045S214 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 959-98-8 | ENDOSULFANA | Endosulfan I | 1.7 | U | µg/kg | 1.7 | 1.7 | N |
| SO | CDBS1045_S | CDBS1045S214 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 33213-65-9 | ENDOSULFANB | Endosulfan II | 1.7 | U | µg/kg | 1.7 | 1.7 | N |
| SO | CDBS1045_S | CDBS1045S214 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 1031-07-8 | ENDOSULFANS | Endosulfan Sulfate | 1.7 | U | µg/kg | 1.7 | 1.7 | N |
| SO | CDBS1045_S | CDBS1045S214 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 72-20-8 | ENDRIN | Endrin | 1.7 | U | µg/kg | 1.7 | 1.7 | N |
| SO | CDBS1045_S | CDBS1045S214 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 7421-93-4 | ENDRINALD | Endrin Aldehyde | 1.7 | U | µg/kg | 1.7 | 1.7 | N |
| SO | CDBS1045_S | CDBS1045S214 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 53494-70-5 | ENDRINKET | Endrin ketone | 1.7 | U | µg/kg | 1.7 | 1.7 | N |
| SO | CDBS1045_S | CDBS1045S214 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 58-89-9 | BHCGAMMA | gamma-BHC | 1.7 | U | µg/kg | 1.7 | 1.7 | N |
| SO | CDBS1045_S | CDBS1045S214 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8015B | HC | GRO C4-C12 | 4541 | GRO (C4-C12) | 500 | J | µg/kg | 210 | 850 | Y |
| SO | CDBS1045_S | CDBS1045S214 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 76-44-8 | HEPTACHLOR | Heptachlor | 1.7 | U | µg/kg | 1.7 | 1.7 | N |
| SO | CDBS1045_S | CDBS1045S214 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 1024-57-3 | HEPT-EPOX | Heptachlor Epoxide | 1.7 | U | µg/kg | 1.7 | 1.7 | N |
| SO | CDBS1045_S | CDBS1045S214 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 72-43-5 | MTXYCL | Methoxychlor | 1.7 | U | µg/kg | 1.7 | 1.7 | N |
| SO | CDBS1045_S | CDBS1045S214 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 2385-85-5 | MIREX | Mirex | 1.7 | U | µg/kg | 1.7 | 1.7 | N |
| SO | CDBS1045_S | CDBS1045S214 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | M8015D | HC | EFHD (C31-C40) | 4503 | ORO (C31-C40) | 23000 | = | µg/kg | 8500 | 8500 | Y |
| SO | CDBS1045_S | CDBS1045S214 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW9060 | GENCHEM | 1-01-2 | TOC | Total Organic Carbon | 2860 | J | mg/kg | 33.3 | 100 | Y |
| SO | CDBS1045_S | CDBS1045S214 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | A2540B | GENCHEM | TSO | TSO | Total Solids | 58.6 | = | PERCENT | | | Y |
| SO | CDBS1045_S | CDBS1045S214 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 8001-35-2 | TOXAP | Toxaphene | 34 | U | µg/kg | 34 | 34 | N |
| SO | CDBS1045_S | CDBS1045S215 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 72-54-8 | DDD44 | 4,4'-DDD | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S215 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 72-55-9 | DDE44 | 4,4'-DDE | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S215 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 50-29-3 | DDT44 | 4,4'-DDT | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S215 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 309-00-2 | ALDRIN | Aldrin | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S215 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 319-84-6 | BHCALPHA | Alpha-BHC | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S215 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 5103-71-9 | CHLORDANEA | Alpha-Chlordane | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S215 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 319-85-7 | BHCBETA | Beta-BHC | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S215 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 57-74-9 | CHLORDANE | Chlordane | 12 | U | µg/kg | 12 | 12 | N |
| SO | CDBS1045_S | CDBS1045S215 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 319-86-8 | BHCDELTA | Delta-BHC | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S215 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 60-57-1 | DIELDRIN | Dieldrin | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S215 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | M8015D | HC | EFHD (C12-C14) | 4786 | Diesel Range Organics (C12-C14) | 6000 | U | µg/kg | 6000 | 6000 | N |
| SO | CDBS1045_S | CDBS1045S215 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | M8015D | HC | EFHD (C15-C20) | EFHDC15C20 | Diesel Range Organics (C15-C20) | 6000 | U | µg/kg | 6000 | 6000 | N |
| SO | CDBS1045_S | CDBS1045S215 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | M8015D | HC | EFHD (C21-C30) | EFHDC21C30 | Diesel Range Organics (C21-C30) | 6000 | U | µg/kg | 6000 | 6000 | N |
| SO | CDBS1045_S | CDBS1045S215 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | M8015D | HC | EFHD (C8-C11) | EFHD (C8-C11) | Diesel Range Organics (C8-C11) | 6000 | U | µg/kg | 6000 | 6000 | N |
| SO | CDBS1045_S | CDBS1045S215 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 959-98-8 | ENDOSULFANA | Endosulfan I | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S215 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 33213-65-9 | ENDOSULFANB | Endosulfan II | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S215 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 1031-07-8 | ENDOSULFANS | Endosulfan Sulfate | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S215 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 72-20-8 | ENDRIN | Endrin | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S215 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 7421-93-4 | ENDRINALD | Endrin Aldehyde | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S215 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 53494-70-5 | ENDRINKET | Endrin ketone | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S215 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 58-89-9 | BHCGAMMA | gamma-BHC | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S215 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8015B | HC | GRO C4-C12 | 4541 | GRO (C4-C12) | 620 | U | µg/kg | 620 | 620 | N |
| SO | CDBS1045_S | CDBS1045S215 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 76-44-8 | HEPTACHLOR | Heptachlor | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S215 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 1024-57-3 | HEPT-EPOX | Heptachlor Epoxide | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S215 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 72-43-5 | MTXYCL | Methoxychlor | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S215 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 2385-85-5 | MIREX | Mirex | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S215 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | M8015D | HC | EFHD (C31-C40) | 4503 | ORO (C31-C40) | 4400 | J | µg/kg | 1900 | 6000 | Y |
| SO | CDBS1045_S | CDBS1045S215 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW9060 | GENCHEM | 1-01-2 | TOC | Total Organic Carbon | 1110 | J | mg/kg | 33.3 | 100 | Y |
| SO | CDBS1045_S | CDBS1045S215 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | A2540B | GENCHEM | TSO | TSO | Total Solids | 83 | = | PERCENT | | | Y |
| SO | CDBS1045_S | CDBS1045S215 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 8001-35-2 | TOXAP | Toxaphene | 24 | U | µg/kg | 24 | 24 | N |
| SO | CDBS1045_S | CDBS1045S216 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 72-54-8 | DDD44 | 4,4'-DDD | 3.4 | U | µg/kg | 3.4 | 3.4 | N |
| SO | CDBS1045_S | CDBS1045S216 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 72-55-9 | DDE44 | 4,4'-DDE | 3.4 | U | µg/kg | 3.4 | 3.4 | N |
| SO | CDBS1045_S | CDBS1045S216 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 50-29-3 | DDT44 | 4,4'-DDT | 3.4 | U | µg/kg | 3.4 | 3.4 | N |
| SO | CDBS1045_S | CDBS1045S216 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 309-00-2 | ALDRIN | Aldrin | 3.4 | U | µg/kg | 3.4 | 3.4 | N |
| SO | CDBS1045_S | CDBS1045S216 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 319-84-6 | BHCALPHA | Alpha-BHC | 3.4 | U | µg/kg | 3.4 | 3.4 | N |
| SO | CDBS1045_S | CDBS1045S216 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 5103-71-9 | CHLORDANEA | Alpha-Chlordane | 3.4 | U | µg/kg | 3.4 | 3.4 | N |

APPENDIX C-1

**Soil Washing Data**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| MATRIX | Station ID | Sample ID | Sample Type | Date Collected | Northing | Easting | Upper Depth | Lower Depth | Method | Parameter Class | CAS | Parameter ID | Parameter Name | Conc | Q | Unit | MDL | RL | Detected |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | CDBS1045_S | CDBS1045S216 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 319-85-7 | BHCBETA | Beta-BHC | 3.4 | U | µg/kg | 3.4 | 3.4 | N |
| SO | CDBS1045_S | CDBS1045S216 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 57-74-9 | CHLORDANE | Chlordane | 34 | U | µg/kg | 34 | 34 | N |
| SO | CDBS1045_S | CDBS1045S216 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 319-86-8 | BHCDELTA | Delta-BHC | 3.4 | U | µg/kg | 3.4 | 3.4 | N |
| SO | CDBS1045_S | CDBS1045S216 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 60-57-1 | DIELDRIN | Dieldrin | 3.4 | U | µg/kg | 3.4 | 3.4 | N |
| SO | CDBS1045_S | CDBS1045S216 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | M8015D | HC | EFHD (C12-C14) | 4786 | Diesel Range Organics (C12-C14) | 38000 | = | µg/kg | 8300 | 8300 | Y |
| SO | CDBS1045_S | CDBS1045S216 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | M8015D | HC | EFHD (C15-C20) | EFHDC15C20 | Diesel Range Organics (C15-C20) | 32000 | = | µg/kg | 8300 | 8300 | Y |
| SO | CDBS1045_S | CDBS1045S216 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | M8015D | HC | EFHD (C21-C30) | EFHDC21C30 | Diesel Range Organics (C21-C30) | 120000 | = | µg/kg | 8300 | 8300 | Y |
| SO | CDBS1045_S | CDBS1045S216 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | M8015D | HC | EFHD (C8-C11) | EFHD (C8-C11) | Diesel Range Organics (C8-C11) | 380000 | = | µg/kg | 8300 | 8300 | Y |
| SO | CDBS1045_S | CDBS1045S216 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 959-98-8 | ENDOSULFANA | Endosulfan I | 3.4 | U | µg/kg | 3.4 | 3.4 | N |
| SO | CDBS1045_S | CDBS1045S216 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 33213-65-9 | ENDOSULFANB | Endosulfan II | 3.4 | U | µg/kg | 3.4 | 3.4 | N |
| SO | CDBS1045_S | CDBS1045S216 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 1031-07-8 | ENDOSULFANS | Endosulfan Sulfate | 3.4 | U | µg/kg | 3.4 | 3.4 | N |
| SO | CDBS1045_S | CDBS1045S216 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 72-20-8 | ENDRIN | Endrin | 3.4 | U | µg/kg | 3.4 | 3.4 | N |
| SO | CDBS1045_S | CDBS1045S216 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 7421-93-4 | ENDRINALD | Endrin Aldehyde | 3.4 | U | µg/kg | 3.4 | 3.4 | N |
| SO | CDBS1045_S | CDBS1045S216 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 53494-70-5 | ENDRINKET | Endrin ketone | 3.4 | U | µg/kg | 3.4 | 3.4 | N |
| SO | CDBS1045_S | CDBS1045S216 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 58-89-9 | BHCGAMMA | gamma-BHC | 3.4 | U | µg/kg | 3.4 | 3.4 | N |
| SO | CDBS1045_S | CDBS1045S216 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8015B | HC | GRO C4-C12 | 4541 | GRO (C4-C12) | 19000000 | = | µg/kg | 340000 | 340000 | Y |
| SO | CDBS1045_S | CDBS1045S216 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 76-44-8 | HEPTACHLOR | Heptachlor | 3.4 | U | µg/kg | 3.4 | 3.4 | N |
| SO | CDBS1045_S | CDBS1045S216 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 1024-57-3 | HEPT-EPOX | Heptachlor Epoxide | 3.4 | U | µg/kg | 3.4 | 3.4 | N |
| SO | CDBS1045_S | CDBS1045S216 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 72-43-5 | MTXYCL | Methoxychlor | 3.4 | U | µg/kg | 3.4 | 3.4 | N |
| SO | CDBS1045_S | CDBS1045S216 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 2385-85-5 | MIREX | Mirex | 3.4 | U | µg/kg | 3.4 | 3.4 | N |
| SO | CDBS1045_S | CDBS1045S216 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | M8015D | HC | EFHD (C31-C40) | 4503 | ORO (C31-C40) | 67000 | = | µg/kg | 8300 | 8300 | Y |
| SO | CDBS1045_S | CDBS1045S216 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | A2540B | GENCHEM | TSO | TSO | Total Solids | 59.4 | = | PERCENT | | | Y |
| SO | CDBS1045_S | CDBS1045S216 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 8001-35-2 | TOXAP | Toxaphene | 67 | U | µg/kg | 67 | 67 | N |
| SO | CDBS1045_S | CDBS1045S217 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 72-54-8 | DDD44 | 4,4'-DDD | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S217 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 72-55-9 | DDE44 | 4,4'-DDE | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S217 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 50-29-3 | DDT44 | 4,4'-DDT | 0.86 | J | µg/kg | 0.41 | 1.2 | Y |
| SO | CDBS1045_S | CDBS1045S217 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 309-00-2 | ALDRIN | Aldrin | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S217 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 319-84-6 | BHCALPHA | Alpha-BHC | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S217 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 5103-71-9 | CHLORDANEA | Alpha-Chlordane | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S217 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 319-85-7 | BHCBETA | Beta-BHC | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S217 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 57-74-9 | CHLORDANE | Chlordane | 12 | U | µg/kg | 12 | 12 | N |
| SO | CDBS1045_S | CDBS1045S217 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 319-86-8 | BHCDELTA | Delta-BHC | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S217 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 60-57-1 | DIELDRIN | Dieldrin | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S217 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | M8015D | HC | EFHD (C12-C14) | 4786 | Diesel Range Organics (C12-C14) | 6100 | U | µg/kg | 6100 | 6100 | N |
| SO | CDBS1045_S | CDBS1045S217 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | M8015D | HC | EFHD (C15-C20) | EFHDC15C20 | Diesel Range Organics (C15-C20) | 2300 | J | µg/kg | 1900 | 6100 | Y |
| SO | CDBS1045_S | CDBS1045S217 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | M8015D | HC | EFHD (C21-C30) | EFHDC21C30 | Diesel Range Organics (C21-C30) | 25000 | = | µg/kg | 6100 | 6100 | Y |
| SO | CDBS1045_S | CDBS1045S217 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | M8015D | HC | EFHD (C8-C11) | EFHD (C8-C11) | Diesel Range Organics (C8-C11) | 6100 | U | µg/kg | 6100 | 6100 | N |
| SO | CDBS1045_S | CDBS1045S217 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 959-98-8 | ENDOSULFANA | Endosulfan I | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S217 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 33213-65-9 | ENDOSULFANB | Endosulfan II | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S217 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 1031-07-8 | ENDOSULFANS | Endosulfan Sulfate | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S217 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 72-20-8 | ENDRIN | Endrin | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S217 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 7421-93-4 | ENDRINALD | Endrin Aldehyde | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S217 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 53494-70-5 | ENDRINKET | Endrin ketone | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S217 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 58-89-9 | BHCGAMMA | gamma-BHC | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S217 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8015B | HC | GRO C4-C12 | 4541 | GRO (C4-C12) | 610 | U | µg/kg | 610 | 610 | N |
| SO | CDBS1045_S | CDBS1045S217 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 76-44-8 | HEPTACHLOR | Heptachlor | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S217 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 1024-57-3 | HEPT-EPOX | Heptachlor Epoxide | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S217 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 72-43-5 | MTXYCL | Methoxychlor | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S217 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 2385-85-5 | MIREX | Mirex | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S217 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | M8015D | HC | EFHD (C31-C40) | 4503 | ORO (C31-C40) | 27000 | = | µg/kg | 6100 | 6100 | Y |
| SO | CDBS1045_S | CDBS1045S217 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW9060 | GENCHEM | 1-01-2 | TOC | Total Organic Carbon | 1590 | J | mg/kg | 33.3 | 100 | Y |
| SO | CDBS1045_S | CDBS1045S217 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | A2540B | GENCHEM | TSO | TSO | Total Solids | 82.5 | = | PERCENT | | | Y |
| SO | CDBS1045_S | CDBS1045S217 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 8001-35-2 | TOXAP | Toxaphene | 24 | U | µg/kg | 24 | 24 | N |
| SO | CDBS1045_S | CDBS1045S218 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 72-54-8 | DDD44 | 4,4'-DDD | 3.1 | U | µg/kg | 3.1 | 3.1 | N |
| SO | CDBS1045_S | CDBS1045S218 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 72-55-9 | DDE44 | 4,4'-DDE | 3.1 | U | µg/kg | 3.1 | 3.1 | N |
| SO | CDBS1045_S | CDBS1045S218 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 50-29-3 | DDT44 | 4,4'-DDT | 3.6 | = | µg/kg | 3.1 | 3.1 | Y |
| SO | CDBS1045_S | CDBS1045S218 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 309-00-2 | ALDRIN | Aldrin | 3.1 | U | µg/kg | 3.1 | 3.1 | N |
| SO | CDBS1045_S | CDBS1045S218 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 319-84-6 | BHCALPHA | Alpha-BHC | 3.1 | U | µg/kg | 3.1 | 3.1 | N |
| SO | CDBS1045_S | CDBS1045S218 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 5103-71-9 | CHLORDANEA | Alpha-Chlordane | 3.1 | U | µg/kg | 3.1 | 3.1 | N |
| SO | CDBS1045_S | CDBS1045S218 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 319-85-7 | BHCBETA | Beta-BHC | 3.1 | U | µg/kg | 3.1 | 3.1 | N |
| SO | CDBS1045_S | CDBS1045S218 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 57-74-9 | CHLORDANE | Chlordane | 31 | U | µg/kg | 31 | 31 | N |
| SO | CDBS1045_S | CDBS1045S218 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 319-86-8 | BHCDELTA | Delta-BHC | 3.1 | U | µg/kg | 3.1 | 3.1 | N |
| SO | CDBS1045_S | CDBS1045S218 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 60-57-1 | DIELDRIN | Dieldrin | 3.1 | U | µg/kg | 3.1 | 3.1 | N |
| SO | CDBS1045_S | CDBS1045S218 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | M8015D | HC | EFHD (C12-C14) | 4786 | Diesel Range Organics (C12-C14) | 11000 | = | µg/kg | 7500 | 7500 | Y |
| SO | CDBS1045_S | CDBS1045S218 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | M8015D | HC | EFHD (C15-C20) | EFHDC15C20 | Diesel Range Organics (C15-C20) | 11000 | = | µg/kg | 7500 | 7500 | Y |
| SO | CDBS1045_S | CDBS1045S218 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | M8015D | HC | EFHD (C21-C30) | EFHDC21C30 | Diesel Range Organics (C21-C30) | 93000 | = | µg/kg | 7500 | 7500 | Y |
| SO | CDBS1045_S | CDBS1045S218 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | M8015D | HC | EFHD (C8-C11) | EFHD (C8-C11) | Diesel Range Organics (C8-C11) | 7500 | U | µg/kg | 7500 | 7500 | N |
| SO | CDBS1045_S | CDBS1045S218 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 959-98-8 | ENDOSULFANA | Endosulfan I | 3.1 | U | µg/kg | 3.1 | 3.1 | N |
| SO | CDBS1045_S | CDBS1045S218 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 33213-65-9 | ENDOSULFANB | Endosulfan II | 3.1 | U | µg/kg | 3.1 | 3.1 | N |

APPENDIX C-1

**Soil Washing Data**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| MATRIX | Station ID | Sample ID | Sample Type | Date Collected | Northing | Easting | Upper Depth | Lower Depth | Method | Parameter Class | CAS | Parameter ID | Parameter Name | Conc | Q | Unit | MDL | RL | Detected |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | CDBS1045_S | CDBS1045S218 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 1031-07-8 | ENDOSULFANS | Endosulfan Sulfate | 3.1 | U | µg/kg | 3.1 | 3.1 | N |
| SO | CDBS1045_S | CDBS1045S218 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 72-20-8 | ENDRIN | Endrin | 3.1 | U | µg/kg | 3.1 | 3.1 | N |
| SO | CDBS1045_S | CDBS1045S218 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 7421-93-4 | ENDRINALD | Endrin Aldehyde | 3.1 | U | µg/kg | 3.1 | 3.1 | N |
| SO | CDBS1045_S | CDBS1045S218 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 53494-70-5 | ENDRINKET | Endrin ketone | 3.1 | U | µg/kg | 3.1 | 3.1 | N |
| SO | CDBS1045_S | CDBS1045S218 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 58-89-9 | BHCGAMMA | gamma-BHC | 3.1 | U | µg/kg | 3.1 | 3.1 | N |
| SO | CDBS1045_S | CDBS1045S218 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8015B | HC | GRO C4-C12 | 4541 | GRO (C4-C12) | 2100 | J | µg/kg | 760 | 760 | Y |
| SO | CDBS1045_S | CDBS1045S218 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 76-44-8 | HEPTACHLOR | Heptachlor | 3.1 | U | µg/kg | 3.1 | 3.1 | N |
| SO | CDBS1045_S | CDBS1045S218 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 1024-57-3 | HEPT-EPOX | Heptachlor Epoxide | 3.1 | U | µg/kg | 3.1 | 3.1 | N |
| SO | CDBS1045_S | CDBS1045S218 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 72-43-5 | MTXYCL | Methoxychlor | 3.1 | U | µg/kg | 3.1 | 3.1 | N |
| SO | CDBS1045_S | CDBS1045S218 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 2385-85-5 | MIREX | Mirex | 3.1 | U | µg/kg | 3.1 | 3.1 | N |
| SO | CDBS1045_S | CDBS1045S218 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | M8015D | HC | EFHD (C31-C40) | 4503 | ORO (C31-C40) | 100000 | = | µg/kg | 7500 | 7500 | Y |
| SO | CDBS1045_S | CDBS1045S218 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW9060 | GENCHEM | 1-01-2 | TOC | Total Organic Carbon | 25000 | J | mg/kg | 118 | 355 | Y |
| SO | CDBS1045_S | CDBS1045S218 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | A2540B | GENCHEM | TSO | TSO | Total Solids | 65.1 | = | PERCENT | | | Y |
| SO | CDBS1045_S | CDBS1045S218 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 8001-35-2 | TOXAP | Toxaphene | 61 | U | µg/kg | 61 | 61 | N |
| SO | CDBS1045_S | CDBS1045S219 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | M8015D | HC | EFHD (C12-C14) | 4786 | Diesel Range Organics (C12-C14) | 500000 | = | µg/kg | 5600 | 5600 | Y |
| SO | CDBS1045_S | CDBS1045S219 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | M8015D | HC | EFHD (C15-C20) | EFHDC15C20 | Diesel Range Organics (C15-C20) | 300000 | = | µg/kg | 5600 | 5600 | Y |
| SO | CDBS1045_S | CDBS1045S219 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | M8015D | HC | EFHD (C21-C30) | EFHDC21C30 | Diesel Range Organics (C21-C30) | 9400 | = | µg/kg | 5600 | 5600 | Y |
| SO | CDBS1045_S | CDBS1045S219 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | M8015D | HC | EFHD (C8-C11) | EFHD (C8-C11) | Diesel Range Organics (C8-C11) | 15000 | = | µg/kg | 5600 | 5600 | Y |
| SO | CDBS1045_S | CDBS1045S219 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8015B | HC | GRO C4-C12 | 4541 | GRO (C4-C12) | 330 | J | µg/kg | 140 | 570 | Y |
| SO | CDBS1045_S | CDBS1045S219 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | M8015D | HC | EFHD (C31-C40) | 4503 | ORO (C31-C40) | 15000 | = | µg/kg | 5600 | 5600 | Y |
| SO | CDBS1045_S | CDBS1045S219 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | A2540B | GENCHEM | TSO | TSO | Total Solids | 88.8 | = | PERCENT | | | Y |
| SO | CDBS1045_S | CDBS1045S220 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 72-54-8 | DDD44 | 4,4'-DDD | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S220 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 72-55-9 | DDE44 | 4,4'-DDE | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S220 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 50-29-3 | DDT44 | 4,4'-DDT | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S220 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 309-00-2 | ALDRIN | Aldrin | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S220 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 319-84-6 | BHCALPHA | Alpha-BHC | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S220 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 5103-71-9 | CHLORDANEA | Alpha-Chlordane | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S220 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 319-85-7 | BHCBETA | Beta-BHC | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S220 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 57-74-9 | CHLORDANE | Chlordane | 12 | U | µg/kg | 12 | 12 | N |
| SO | CDBS1045_S | CDBS1045S220 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 319-86-8 | BHCDELTA | Delta-BHC | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S220 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 60-57-1 | DIELDRIN | Dieldrin | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S220 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | M8015D | HC | EFHD (C12-C14) | 4786 | Diesel Range Organics (C12-C14) | 4800 | J | µg/kg | 1900 | 6200 | Y |
| SO | CDBS1045_S | CDBS1045S220 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | M8015D | HC | EFHD (C15-C20) | EFHDC15C20 | Diesel Range Organics (C15-C20) | 4800 | J | µg/kg | 1900 | 6200 | Y |
| SO | CDBS1045_S | CDBS1045S220 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | M8015D | HC | EFHD (C21-C30) | EFHDC21C30 | Diesel Range Organics (C21-C30) | 6200 | U | µg/kg | 6200 | 6200 | N |
| SO | CDBS1045_S | CDBS1045S220 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | M8015D | HC | EFHD (C8-C11) | EFHD (C8-C11) | Diesel Range Organics (C8-C11) | 6200 | U | µg/kg | 6200 | 6200 | N |
| SO | CDBS1045_S | CDBS1045S220 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 959-98-8 | ENDOSULFANA | Endosulfan I | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S220 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 33213-65-9 | ENDOSULFANB | Endosulfan II | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S220 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 1031-07-8 | ENDOSULFANS | Endosulfan Sulfate | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S220 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 72-20-8 | ENDRIN | Endrin | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S220 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 7421-93-4 | ENDRINALD | Endrin Aldehyde | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S220 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 53494-70-5 | ENDRINKET | Endrin ketone | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S220 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 58-89-9 | BHCGAMMA | gamma-BHC | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S220 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8015B | HC | GRO C4-C12 | 4541 | GRO (C4-C12) | 610 | U | µg/kg | 610 | 610 | N |
| SO | CDBS1045_S | CDBS1045S220 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 76-44-8 | HEPTACHLOR | Heptachlor | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S220 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 1024-57-3 | HEPT-EPOX | Heptachlor Epoxide | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S220 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 72-43-5 | MTXYCL | Methoxychlor | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S220 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 2385-85-5 | MIREX | Mirex | 1.2 | U | µg/kg | 1.2 | 1.2 | N |
| SO | CDBS1045_S | CDBS1045S220 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | M8015D | HC | EFHD (C31-C40) | 4503 | ORO (C31-C40) | 6200 | U | µg/kg | 6200 | 6200 | N |
| SO | CDBS1045_S | CDBS1045S220 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW9060 | GENCHEM | 1-01-2 | TOC | Total Organic Carbon | 496 | J | mg/kg | 33.3 | 100 | Y |
| SO | CDBS1045_S | CDBS1045S220 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | A2540B | GENCHEM | TSO | TSO | Total Solids | 80.2 | = | PERCENT | | | Y |
| SO | CDBS1045_S | CDBS1045S220 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 8001-35-2 | TOXAP | Toxaphene | 25 | U | µg/kg | 25 | 25 | N |
| SO | CDBS1045_S | CDBS1045S222 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 72-54-8 | DDD44 | 4,4'-DDD | 1.3 | U | µg/kg | 1.3 | 1.3 | N |
| SO | CDBS1045_S | CDBS1045S222 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 72-55-9 | DDE44 | 4,4'-DDE | 1.3 | U | µg/kg | 1.3 | 1.3 | N |
| SO | CDBS1045_S | CDBS1045S222 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 50-29-3 | DDT44 | 4,4'-DDT | 1.3 | U | µg/kg | 1.3 | 1.3 | N |
| SO | CDBS1045_S | CDBS1045S222 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 309-00-2 | ALDRIN | Aldrin | 1.3 | U | µg/kg | 1.3 | 1.3 | N |
| SO | CDBS1045_S | CDBS1045S222 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 319-84-6 | BHCALPHA | Alpha-BHC | 1.3 | U | µg/kg | 1.3 | 1.3 | N |
| SO | CDBS1045_S | CDBS1045S222 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 5103-71-9 | CHLORDANEA | Alpha-Chlordane | 1.3 | U | µg/kg | 1.3 | 1.3 | N |
| SO | CDBS1045_S | CDBS1045S222 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 319-85-7 | BHCBETA | Beta-BHC | 1.3 | U | µg/kg | 1.3 | 1.3 | N |
| SO | CDBS1045_S | CDBS1045S222 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 57-74-9 | CHLORDANE | Chlordane | 13 | U | µg/kg | 13 | 13 | N |
| SO | CDBS1045_S | CDBS1045S222 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 319-86-8 | BHCDELTA | Delta-BHC | 1.3 | U | µg/kg | 1.3 | 1.3 | N |
| SO | CDBS1045_S | CDBS1045S222 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 60-57-1 | DIELDRIN | Dieldrin | 1.3 | U | µg/kg | 1.3 | 1.3 | N |
| SO | CDBS1045_S | CDBS1045S222 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | M8015D | HC | EFHD (C12-C14) | 4786 | Diesel Range Organics (C12-C14) | 6600 | U | µg/kg | 6600 | 6600 | N |
| SO | CDBS1045_S | CDBS1045S222 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | M8015D | HC | EFHD (C15-C20) | EFHDC15C20 | Diesel Range Organics (C15-C20) | 6600 | U | µg/kg | 6600 | 6600 | N |
| SO | CDBS1045_S | CDBS1045S222 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | M8015D | HC | EFHD (C21-C30) | EFHDC21C30 | Diesel Range Organics (C21-C30) | 6600 | U | µg/kg | 6600 | 6600 | N |
| SO | CDBS1045_S | CDBS1045S222 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | M8015D | HC | EFHD (C8-C11) | EFHD (C8-C11) | Diesel Range Organics (C8-C11) | 7700 | = | µg/kg | 6600 | 6600 | Y |
| SO | CDBS1045_S | CDBS1045S222 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 959-98-8 | ENDOSULFANA | Endosulfan I | 1.3 | U | µg/kg | 1.3 | 1.3 | N |
| SO | CDBS1045_S | CDBS1045S222 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 33213-65-9 | ENDOSULFANB | Endosulfan II | 1.3 | U | µg/kg | 1.3 | 1.3 | N |
| SO | CDBS1045_S | CDBS1045S222 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 1031-07-8 | ENDOSULFANS | Endosulfan Sulfate | 1.3 | U | µg/kg | 1.3 | 1.3 | N |
| SO | CDBS1045_S | CDBS1045S222 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 72-20-8 | ENDRIN | Endrin | 1.3 | U | µg/kg | 1.3 | 1.3 | N |

APPENDIX C-1

**Soil Washing Data**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| MATRIX | Station ID | Sample ID | Sample Type | Date Collected | Northing | Easting | Upper Depth | Lower Depth | Method | Parameter Class | CAS | Parameter ID | Parameter Name | Conc | Q | Unit | MDL | RL | Detected |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | CDBS1045_S | CDBS1045S222 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 7421-93-4 | ENDRINALD | Endrin Aldehyde | 1.3 | U | µg/kg | 1.3 | 1.3 | N |
| SO | CDBS1045_S | CDBS1045S222 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 53494-70-5 | ENDRINKET | Endrin ketone | 1.3 | U | µg/kg | 1.3 | 1.3 | N |
| SO | CDBS1045_S | CDBS1045S222 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 58-89-9 | BHCGAMMA | gamma-BHC | 1.3 | U | µg/kg | 1.3 | 1.3 | N |
| SO | CDBS1045_S | CDBS1045S222 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8015B | HC | GRO C4-C12 | 4541 | GRO (C4-C12) | 500 | J | µg/kg | 160 | 640 | Y |
| SO | CDBS1045_S | CDBS1045S222 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 76-44-8 | HEPTACHLOR | Heptachlor | 1.3 | U | µg/kg | 1.3 | 1.3 | N |
| SO | CDBS1045_S | CDBS1045S222 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 1024-57-3 | HEPT-EPOX | Heptachlor Epoxide | 1.3 | U | µg/kg | 1.3 | 1.3 | N |
| SO | CDBS1045_S | CDBS1045S222 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 72-43-5 | MTXYCL | Methoxychlor | 1.3 | U | µg/kg | 1.3 | 1.3 | N |
| SO | CDBS1045_S | CDBS1045S222 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 2385-85-5 | MIREX | Mirex | 1.3 | U | µg/kg | 1.3 | 1.3 | N |
| SO | CDBS1045_S | CDBS1045S222 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | M8015D | HC | EFHD (C31-C40) | 4503 | ORO (C31-C40) | 6600 | U | µg/kg | 6600 | 6600 | N |
| SO | CDBS1045_S | CDBS1045S222 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW9060 | GENCHEM | 1-01-2 | TOC | Total Organic Carbon | 274 | J | mg/kg | 33.3 | 100 | Y |
| SO | CDBS1045_S | CDBS1045S222 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | A2540B | GENCHEM | TSO | TSO | Total Solids | 75.3 | = | PERCENT | | | Y |
| SO | CDBS1045_S | CDBS1045S222 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 8001-35-2 | TOXAP | Toxaphene | 27 | U | µg/kg | 27 | 27 | N |
| SO | CDBS1045_S | CDBS1045S224 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 72-54-8 | DDD44 | 4,4'-DDD | 1.3 | U | µg/kg | 1.3 | 1.3 | N |
| SO | CDBS1045_S | CDBS1045S224 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 72-55-9 | DDE44 | 4,4'-DDE | 1.3 | U | µg/kg | 1.3 | 1.3 | N |
| SO | CDBS1045_S | CDBS1045S224 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 50-29-3 | DDT44 | 4,4'-DDT | 1.3 | U | µg/kg | 1.3 | 1.3 | N |
| SO | CDBS1045_S | CDBS1045S224 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 309-00-2 | ALDRIN | Aldrin | 1.3 | U | µg/kg | 1.3 | 1.3 | N |
| SO | CDBS1045_S | CDBS1045S224 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 319-84-6 | BHCALPHA | Alpha-BHC | 1.3 | U | µg/kg | 1.3 | 1.3 | N |
| SO | CDBS1045_S | CDBS1045S224 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 5103-71-9 | CHLORDANEA | Alpha-Chlordane | 1.3 | U | µg/kg | 1.3 | 1.3 | N |
| SO | CDBS1045_S | CDBS1045S224 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 319-85-7 | BHCBETA | Beta-BHC | 1.3 | U | µg/kg | 1.3 | 1.3 | N |
| SO | CDBS1045_S | CDBS1045S224 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 57-74-9 | CHLORDANE | Chlordane | 13 | U | µg/kg | 13 | 13 | N |
| SO | CDBS1045_S | CDBS1045S224 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 319-86-8 | BHCDELTA | Delta-BHC | 1.3 | U | µg/kg | 1.3 | 1.3 | N |
| SO | CDBS1045_S | CDBS1045S224 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 60-57-1 | DIELDRIN | Dieldrin | 1.3 | U | µg/kg | 1.3 | 1.3 | N |
| SO | CDBS1045_S | CDBS1045S224 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | M8015D | HC | EFHD (C12-C14) | 4786 | Diesel Range Organics (C12-C14) | 6600 | U | µg/kg | 6600 | 6600 | N |
| SO | CDBS1045_S | CDBS1045S224 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | M8015D | HC | EFHD (C15-C20) | EFHDC15C20 | Diesel Range Organics (C15-C20) | 6600 | U | µg/kg | 6600 | 6600 | N |
| SO | CDBS1045_S | CDBS1045S224 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | M8015D | HC | EFHD (C21-C30) | EFHDC21C30 | Diesel Range Organics (C21-C30) | 6600 | U | µg/kg | 6600 | 6600 | N |
| SO | CDBS1045_S | CDBS1045S224 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | M8015D | HC | EFHD (C8-C11) | EFHD (C8-C11) | Diesel Range Organics (C8-C11) | 6600 | U | µg/kg | 6600 | 6600 | N |
| SO | CDBS1045_S | CDBS1045S224 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 959-98-8 | ENDOSULFANA | Endosulfan I | 1.3 | U | µg/kg | 1.3 | 1.3 | N |
| SO | CDBS1045_S | CDBS1045S224 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 33213-65-9 | ENDOSULFANB | Endosulfan II | 1.3 | U | µg/kg | 1.3 | 1.3 | N |
| SO | CDBS1045_S | CDBS1045S224 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 1031-07-8 | ENDOSULFANS | Endosulfan Sulfate | 1.3 | U | µg/kg | 1.3 | 1.3 | N |
| SO | CDBS1045_S | CDBS1045S224 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 72-20-8 | ENDRIN | Endrin | 1.3 | U | µg/kg | 1.3 | 1.3 | N |
| SO | CDBS1045_S | CDBS1045S224 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 7421-93-4 | ENDRINALD | Endrin Aldehyde | 1.3 | U | µg/kg | 1.3 | 1.3 | N |
| SO | CDBS1045_S | CDBS1045S224 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 53494-70-5 | ENDRINKET | Endrin ketone | 1.3 | U | µg/kg | 1.3 | 1.3 | N |
| SO | CDBS1045_S | CDBS1045S224 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 58-89-9 | BHCGAMMA | gamma-BHC | 1.3 | U | µg/kg | 1.3 | 1.3 | N |
| SO | CDBS1045_S | CDBS1045S224 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8015B | HC | GRO C4-C12 | 4541 | GRO (C4-C12) | 660 | U | µg/kg | 660 | 660 | N |
| SO | CDBS1045_S | CDBS1045S224 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 76-44-8 | HEPTACHLOR | Heptachlor | 1.3 | U | µg/kg | 1.3 | 1.3 | N |
| SO | CDBS1045_S | CDBS1045S224 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 1024-57-3 | HEPT-EPOX | Heptachlor Epoxide | 1.3 | U | µg/kg | 1.3 | 1.3 | N |
| SO | CDBS1045_S | CDBS1045S224 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 72-43-5 | MTXYCL | Methoxychlor | 1.3 | U | µg/kg | 1.3 | 1.3 | N |
| SO | CDBS1045_S | CDBS1045S224 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 2385-85-5 | MIREX | Mirex | 1.3 | U | µg/kg | 1.3 | 1.3 | N |
| SO | CDBS1045_S | CDBS1045S224 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | M8015D | HC | EFHD (C31-C40) | 4503 | ORO (C31-C40) | 6600 | U | µg/kg | 6600 | 6600 | N |
| SO | CDBS1045_S | CDBS1045S224 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW9060 | GENCHEM | 1-01-2 | TOC | Total Organic Carbon | 441 | J | mg/kg | 33.3 | 100 | Y |
| SO | CDBS1045_S | CDBS1045S224 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | A2540B | GENCHEM | TSO | TSO | Total Solids | 75.2 | = | PERCENT | | | Y |
| SO | CDBS1045_S | CDBS1045S224 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 11 | SW8081 | OCPEST | 8001-35-2 | TOXAP | Toxaphene | 27 | U | µg/kg | 27 | 27 | N |
| SO | CDBS1045_S | CDBS1045S115 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | DIOXTEQM | DIOXTEQM | DIOXTEQM | 1.58096 | = | PG/G | | | Y |
| SO | CDBS1045_S | CDBS1045S116S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | E1613B | DIOX | DIOXTEQM | DIOXTEQM | DIOXTEQM | 18.33898 | = | PG/G | | | Y |
| SO | CDBS1045_S | CDBS1045S117 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | DIOXTEQM | DIOXTEQM | DIOXTEQM | 3.09192 | = | PG/G | | | Y |
| SO | CDBS1045_S | CDBS1045S120 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | DIOXTEQM | DIOXTEQM | DIOXTEQM | 1.505062 | = | PG/G | | | Y |
| SO | CDBS1045_S | CDBS1045S122 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | DIOXTEQM | DIOXTEQM | DIOXTEQM | 0.84308 | = | PG/G | | | Y |
| SO | CDBS1045_S | CDBS1045S124 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | DIOXTEQM | DIOXTEQM | DIOXTEQM | 0.548855 | = | PG/G | | | Y |
| SO | CDBS1045_S | CDBS1045S104 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | DIOXTEQM | DIOXTEQM | DIOXTEQM | 9.27682 | = | PG/G | | | Y |
| SO | CDBS1045_S | CDBS1045S105 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | DIOXTEQM | DIOXTEQM | DIOXTEQM | 2.58307 | = | PG/G | | | Y |
| SO | CDBS1045_S | CDBS1045S106 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | DIOXTEQM | DIOXTEQM | DIOXTEQM | 1.95653 | = | PG/G | | | Y |
| SO | CDBS1045_S | CDBS1045S109 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | DIOXTEQM | DIOXTEQM | DIOXTEQM | 11.11271 | = | PG/G | | | Y |
| SO | CDBS1045_S | CDBS1045S111 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | DIOXTEQM | DIOXTEQM | DIOXTEQM | 3.36606 | = | PG/G | | | Y |
| SO | CDBS1045_S | CDBS1045S112 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | DIOXTEQM | DIOXTEQM | DIOXTEQM | 26.6913 | = | PG/G | | | Y |
| SO | CDBS1045_S | CDBS1045S113 | N | 6/20/2014 | 265693.857 | 1786730.644 | 0 | 5 | SW8290 | DIOX | DIOXTEQM | DIOXTEQM | DIOXTEQM | 1.56496 | = | PG/G | | | Y |
| SO | CDBS1045_S | CDBS1045S114S | FS | 8/4/2014 | 265693.857 | 1786730.644 | 0 | 5 | E1613B | DIOX | DIOXTEQM | DIOXTEQM | DIOXTEQM | 14.65224 | = | PG/G | | | Y |
| WW | CDBS1045_W | CDLS1045S201 | N | 8/6/2014 | 265693.857 | 1786730.644 | 0 | 0 | A2540C | GENCHEM | E-10173 | TDS | Total Dissolved Solids | 170 | = | MG/L | | | Y |
| WW | CDBS1045_W | CDLS1045S201 | N | 8/6/2014 | 265693.857 | 1786730.644 | 0 | 0 | A2540D | GENCHEM | TSS | SS | Total Suspended Solids | 45 | = | MG/L | | | Y |
| WW | CDBS1045_W | CDLS1045S201 | N | 8/6/2014 | 265693.857 | 1786730.644 | 0 | 0 | A4500HB | GENCHEM | E-10139 | PH | pH | 6.98 | J | PH UNITS | | | Y |
| WW | CDBS1045_W | CDLS1045S201 | N | 8/6/2014 | 265693.857 | 1786730.644 | 0 | 0 | M8015D | HC | EFHD (C12-C14) | 4786 | Diesel Range Organics (C12-C14) | 580 | J | UG/L | 50 | 50 | Y |
| WW | CDBS1045_W | CDLS1045S201 | N | 8/6/2014 | 265693.857 | 1786730.644 | 0 | 0 | M8015D | HC | EFHD (C15-C20) | EFHDC15C20 | Diesel Range Organics (C15-C20) | 50 | UJ | UG/L | 50 | 50 | N |
| WW | CDBS1045_W | CDLS1045S201 | N | 8/6/2014 | 265693.857 | 1786730.644 | 0 | 0 | M8015D | HC | EFHD (C21-C30) | EFHDC21C30 | Diesel Range Organics (C21-C30) | 780 | J | UG/L | 50 | 50 | Y |
| WW | CDBS1045_W | CDLS1045S201 | N | 8/6/2014 | 265693.857 | 1786730.644 | 0 | 0 | M8015D | HC | EFHD (C8-C11) | EFHD (C8-C11) | Diesel Range Organics (C8-C11) | 50 | UJ | UG/L | 50 | 50 | N |
| WW | CDBS1045_W | CDLS1045S201 | N | 8/6/2014 | 265693.857 | 1786730.644 | 0 | 0 | M8015D | HC | EFHD (C31-C40) | 4503 | ORO (C31-C40) | 1200 | = | UG/L | 50 | 50 | Y |
| WW | CDBS1045_W | CDLS1045S201 | N | 8/6/2014 | 265693.857 | 1786730.644 | 0 | 0 | M8015D | HC | C7 | TPHC7 | TPH C-7 | 50 | UJ | UG/L | 50 | 50 | N |
| WW | CDBS1045_W | CDLS1045S201 | N | 8/6/2014 | 265693.857 | 1786730.644 | 0 | 0 | SW6020 | INO | 7440-36-0 | SB | Antimony | 0.0164 | = | MG/L | 0.002 | 0.002 | Y |
| WW | CDBS1045_W | CDLS1045S201 | N | 8/6/2014 | 265693.857 | 1786730.644 | 0 | 0 | SW6020 | INO | 7440-43-9 | CD | Cadmium | 0.000137 | J | MG/L | 0.000128 | 0.001 | Y |
| WW | CDBS1045_W | CDLS1045S201 | N | 8/6/2014 | 265693.857 | 1786730.644 | 0 | 0 | SW6020 | INO | 7439-92-1 | PB | Lead | 0.00487 | = | MG/L | 0.001 | 0.001 | Y |
| WW | CDBS1045_W | CDLS1045S201 | N | 8/6/2014 | 265693.857 | 1786730.644 | 0 | 0 | SW6020 | INO | 7439-98-7 | MO | Molybdenum | 0.00289 | J | MG/L | 0.000127 | 0.01 | Y |

APPENDIX C-1

**Soil Washing Data**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| MATRIX | Station ID | Sample ID | Sample Type | Date Collected | Northing | Easting | Upper Depth | Lower Depth | Method | Parameter Class | CAS | Parameter ID | Parameter Name | Conc | Q | Unit | MDL | RL | Detected |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| WW | CDBS1045_W | CDLS1045S201 | N | 8/6/2014 | 265693.857 | 1786730.644 | 0 | 0 | SW6020 | INO | 7440-22-4 | AG | Silver | 0.000236 | J | MG/L | 0.000111 | 0.001 | Y |
| WW | CDBS1045_W | CDLS1045S201 | N | 8/6/2014 | 265693.857 | 1786730.644 | 0 | 0 | SW7470A | INO | 7439-97-6 | HG | Mercury | 0.0000453 | U | MG/L | 0.0005 | 0.0005 | N |
| WW | CDBS1045_W | CDLS1045S201 | N | 8/6/2014 | 265693.857 | 1786730.644 | 0 | 0 | SW8081 | OCPEST | 72-54-8 | DDD44 | 4,4'-DDD | 0.0097 | U | UG/L | 0.0097 | 0.0097 | N |
| WW | CDBS1045_W | CDLS1045S201 | N | 8/6/2014 | 265693.857 | 1786730.644 | 0 | 0 | SW8081 | OCPEST | 72-55-9 | DDE44 | 4,4'-DDE | 0.0097 | U | UG/L | 0.0097 | 0.0097 | N |
| WW | CDBS1045_W | CDLS1045S201 | N | 8/6/2014 | 265693.857 | 1786730.644 | 0 | 0 | SW8081 | OCPEST | 50-29-3 | DDT44 | 4,4'-DDT | 0.0097 | U | UG/L | 0.0097 | 0.0097 | N |
| WW | CDBS1045_W | CDLS1045S201 | N | 8/6/2014 | 265693.857 | 1786730.644 | 0 | 0 | SW8081 | OCPEST | 309-00-2 | ALDRIN | Aldrin | 0.0097 | U | UG/L | 0.0097 | 0.0097 | N |
| WW | CDBS1045_W | CDLS1045S201 | N | 8/6/2014 | 265693.857 | 1786730.644 | 0 | 0 | SW8081 | OCPEST | 319-84-6 | BHCALPHA | Alpha-BHC | 0.0097 | U | UG/L | 0.0097 | 0.0097 | N |
| WW | CDBS1045_W | CDLS1045S201 | N | 8/6/2014 | 265693.857 | 1786730.644 | 0 | 0 | SW8081 | OCPEST | 319-85-7 | BHCBETA | Beta-BHC | 0.0097 | U | UG/L | 0.0097 | 0.0097 | N |
| WW | CDBS1045_W | CDLS1045S201 | N | 8/6/2014 | 265693.857 | 1786730.644 | 0 | 0 | SW8081 | OCPEST | 57-74-9 | CHLORDANE | Chlordane | 0.029 | U | UG/L | 0.029 | 0.029 | N |
| WW | CDBS1045_W | CDLS1045S201 | N | 8/6/2014 | 265693.857 | 1786730.644 | 0 | 0 | SW8081 | OCPEST | 319-86-8 | BHCDELTA | Delta-BHC | 0.0097 | U | UG/L | 0.0097 | 0.0097 | N |
| WW | CDBS1045_W | CDLS1045S201 | N | 8/6/2014 | 265693.857 | 1786730.644 | 0 | 0 | SW8081 | OCPEST | 60-57-1 | DIELDRIN | Dieldrin | 0.0097 | U | UG/L | 0.0097 | 0.0097 | N |
| WW | CDBS1045_W | CDLS1045S201 | N | 8/6/2014 | 265693.857 | 1786730.644 | 0 | 0 | SW8081 | OCPEST | 959-98-8 | ENDOSULFANA | Endosulfan I | 0.0097 | U | UG/L | 0.0097 | 0.0097 | N |
| WW | CDBS1045_W | CDLS1045S201 | N | 8/6/2014 | 265693.857 | 1786730.644 | 0 | 0 | SW8081 | OCPEST | 33213-65-9 | ENDOSULFANB | Endosulfan II | 0.0097 | U | UG/L | 0.0097 | 0.0097 | N |
| WW | CDBS1045_W | CDLS1045S201 | N | 8/6/2014 | 265693.857 | 1786730.644 | 0 | 0 | SW8081 | OCPEST | 1031-07-8 | ENDOSULFANS | Endosulfan Sulfate | 0.0097 | U | UG/L | 0.0097 | 0.0097 | N |
| WW | CDBS1045_W | CDLS1045S201 | N | 8/6/2014 | 265693.857 | 1786730.644 | 0 | 0 | SW8081 | OCPEST | 72-20-8 | ENDRIN | Endrin | 0.0097 | U | UG/L | 0.0097 | 0.0097 | N |
| WW | CDBS1045_W | CDLS1045S201 | N | 8/6/2014 | 265693.857 | 1786730.644 | 0 | 0 | SW8081 | OCPEST | 7421-93-4 | ENDRINALD | Endrin Aldehyde | 0.0097 | U | UG/L | 0.0097 | 0.0097 | N |
| WW | CDBS1045_W | CDLS1045S201 | N | 8/6/2014 | 265693.857 | 1786730.644 | 0 | 0 | SW8081 | OCPEST | 53494-70-5 | ENDRINKET | Endrin ketone | 0.0097 | U | UG/L | 0.0097 | 0.0097 | N |
| WW | CDBS1045_W | CDLS1045S201 | N | 8/6/2014 | 265693.857 | 1786730.644 | 0 | 0 | SW8081 | OCPEST | 58-89-9 | BHCGAMMA | gamma-BHC | 0.0097 | U | UG/L | 0.0097 | 0.0097 | N |
| WW | CDBS1045_W | CDLS1045S201 | N | 8/6/2014 | 265693.857 | 1786730.644 | 0 | 0 | SW8081 | OCPEST | 76-44-8 | HEPTACHLOR | Heptachlor | 0.0097 | U | UG/L | 0.0097 | 0.0097 | N |
| WW | CDBS1045_W | CDLS1045S201 | N | 8/6/2014 | 265693.857 | 1786730.644 | 0 | 0 | SW8081 | OCPEST | 1024-57-3 | HEPT-EPOX | Heptachlor Epoxide | 0.0097 | U | UG/L | 0.0097 | 0.0097 | N |
| WW | CDBS1045_W | CDLS1045S201 | N | 8/6/2014 | 265693.857 | 1786730.644 | 0 | 0 | SW8081 | OCPEST | 72-43-5 | MTXYCL | Methoxychlor | 0.0097 | U | UG/L | 0.0097 | 0.0097 | N |
| WW | CDBS1045_W | CDLS1045S201 | N | 8/6/2014 | 265693.857 | 1786730.644 | 0 | 0 | SW8081 | OCPEST | 2385-85-5 | MIREX | Mirex | 0.0097 | U | UG/L | 0.0097 | 0.0097 | N |
| WW | CDBS1045_W | CDLS1045S201 | N | 8/6/2014 | 265693.857 | 1786730.644 | 0 | 0 | SW8081 | OCPEST | 8001-35-2 | TOXAP | Toxaphene | 0.12 | U | UG/L | 0.12 | 0.12 | N |
| WW | CDBS1045_W | CDLS1045S201 | N | 8/6/2014 | 265693.857 | 1786730.644 | 0 | 0 | SW8082 | ARCL | 12674-11-2 | PCB1016 | Aroclor 1016 | 0.097 | U | UG/L | 0.097 | 0.097 | N |
| WW | CDBS1045_W | CDLS1045S201 | N | 8/6/2014 | 265693.857 | 1786730.644 | 0 | 0 | SW8082 | ARCL | 11104-28-2 | PCB1221 | Aroclor 1221 | 0.19 | U | UG/L | 0.19 | 0.19 | N |
| WW | CDBS1045_W | CDLS1045S201 | N | 8/6/2014 | 265693.857 | 1786730.644 | 0 | 0 | SW8082 | ARCL | 11141-16-5 | PCB1232 | Aroclor 1232 | 0.097 | U | UG/L | 0.097 | 0.097 | N |
| WW | CDBS1045_W | CDLS1045S201 | N | 8/6/2014 | 265693.857 | 1786730.644 | 0 | 0 | SW8082 | ARCL | 53469-21-9 | PCB1242 | Aroclor 1242 | 0.097 | U | UG/L | 0.097 | 0.097 | N |
| WW | CDBS1045_W | CDLS1045S201 | N | 8/6/2014 | 265693.857 | 1786730.644 | 0 | 0 | SW8082 | ARCL | 12672-29-6 | PCB1248 | Aroclor 1248 | 0.097 | U | UG/L | 0.097 | 0.097 | N |
| WW | CDBS1045_W | CDLS1045S201 | N | 8/6/2014 | 265693.857 | 1786730.644 | 0 | 0 | SW8082 | ARCL | 11097-69-1 | PCB1254 | Aroclor 1254 | 0.097 | U | UG/L | 0.097 | 0.097 | N |
| WW | CDBS1045_W | CDLS1045S201 | N | 8/6/2014 | 265693.857 | 1786730.644 | 0 | 0 | SW8082 | ARCL | 11096-82-5 | PCB1260 | Aroclor 1260 | 0.097 | U | UG/L | 0.097 | 0.097 | N |
| WW | CDBS1045_W | CDLS1045S201 | N | 8/6/2014 | 265693.857 | 1786730.644 | 0 | 0 | SW8082 | ARCL | 37324-23-5 | PCB1262 | Aroclor 1262 | 0.19 | U | UG/L | 0.19 | 0.19 | N |
| WW | CDBS1045_W | CDLS1045S201 | N | 8/6/2014 | 265693.857 | 1786730.644 | 0 | 0 | SW8082 | ARCL | 11100-14-4 | PCB1268 | PCB-1268 (Aroclor 1268) | 0.19 | U | UG/L | 0.19 | 0.19 | N |
| WW | CDBS1045_W | CDLS1045S201 | N | 8/6/2014 | 265693.857 | 1786730.644 | 0 | 0 | SW8290 | DIOX | 35822-46-9 | HPCDD1234678 | 1,2,3,4,6,7,8-HpCDD | 0.0403 | J | NG/L | 0.0035 | 0.0484 | Y |
| WW | CDBS1045_W | CDLS1045S201 | N | 8/6/2014 | 265693.857 | 1786730.644 | 0 | 0 | SW8290 | DIOX | 67562-39-4 | HPCDF1234678 | 1,2,3,4,6,7,8-HpCDF | 0.00228 | U | NG/L | 0.000975 | 0.0484 | N |
| WW | CDBS1045_W | CDLS1045S201 | N | 8/6/2014 | 265693.857 | 1786730.644 | 0 | 0 | SW8290 | DIOX | 55673-89-7 | HPCDF1234789 | 1,2,3,4,7,8,9-HpCDF | 0.00129 | U | NG/L | 0.00129 | 0.0484 | N |
| WW | CDBS1045_W | CDLS1045S201 | N | 8/6/2014 | 265693.857 | 1786730.644 | 0 | 0 | SW8290 | DIOX | 39227-28-6 | HXCDD123478 | 1,2,3,4,7,8-HxCDD | 0.00279 | U | NG/L | 0.00279 | 0.0484 | N |
| WW | CDBS1045_W | CDLS1045S201 | N | 8/6/2014 | 265693.857 | 1786730.644 | 0 | 0 | SW8290 | DIOX | 70648-26-9 | HXCDF123478 | 1,2,3,4,7,8-HxCDF | 0.000813 | U | NG/L | 0.000813 | 0.0484 | N |
| WW | CDBS1045_W | CDLS1045S201 | N | 8/6/2014 | 265693.857 | 1786730.644 | 0 | 0 | SW8290 | DIOX | 57653-85-7 | HXCDD123678 | 1,2,3,6,7,8-HxCDD | 0.00373 | U | NG/L | 0.00271 | 0.0484 | N |
| WW | CDBS1045_W | CDLS1045S201 | N | 8/6/2014 | 265693.857 | 1786730.644 | 0 | 0 | SW8290 | DIOX | 57117-44-9 | HXCDF123678 | 1,2,3,6,7,8-HxCDF | 0.000737 | U | NG/L | 0.000737 | 0.0484 | N |
| WW | CDBS1045_W | CDLS1045S201 | N | 8/6/2014 | 265693.857 | 1786730.644 | 0 | 0 | SW8290 | DIOX | 19408-74-3 | HXCDD123789 | 1,2,3,7,8,9-HxCDD | 0.00377 | J | NG/L | 0.00292 | 0.0484 | Y |
| WW | CDBS1045_W | CDLS1045S201 | N | 8/6/2014 | 265693.857 | 1786730.644 | 0 | 0 | SW8290 | DIOX | 72918-21-9 | HXCDF123789 | 1,2,3,7,8,9-HxCDF | 0.000923 | U | NG/L | 0.000923 | 0.0484 | N |
| WW | CDBS1045_W | CDLS1045S201 | N | 8/6/2014 | 265693.857 | 1786730.644 | 0 | 0 | SW8290 | DIOX | 40321-76-4 | PECDD12378 | 1,2,3,7,8-PeCDD | 0.00137 | U | NG/L | 0.00137 | 0.0484 | N |
| WW | CDBS1045_W | CDLS1045S201 | N | 8/6/2014 | 265693.857 | 1786730.644 | 0 | 0 | SW8290 | DIOX | 57117-41-6 | PECDF12378 | 1,2,3,7,8-PeCDF | 0.000983 | U | NG/L | 0.000983 | 0.0484 | N |
| WW | CDBS1045_W | CDLS1045S201 | N | 8/6/2014 | 265693.857 | 1786730.644 | 0 | 0 | SW8290 | DIOX | 60851-34-5 | HXCDF234678 | 2,3,4,6,7,8-HxCDF | 0.000786 | U | NG/L | 0.000786 | 0.0484 | N |
| WW | CDBS1045_W | CDLS1045S201 | N | 8/6/2014 | 265693.857 | 1786730.644 | 0 | 0 | SW8290 | DIOX | 57117-31-4 | PECDF23478 | 2,3,4,7,8-PeCDF | 0.000969 | U | NG/L | 0.000969 | 0.0484 | N |
| WW | CDBS1045_W | CDLS1045S201 | N | 8/6/2014 | 265693.857 | 1786730.644 | 0 | 0 | SW8290 | DIOX | 1746-01-6 | TCDD2378 | 2,3,7,8-TCDD | 0.000913 | U | NG/L | 0.000913 | 0.00967 | N |
| WW | CDBS1045_W | CDLS1045S201 | N | 8/6/2014 | 265693.857 | 1786730.644 | 0 | 0 | SW8290 | DIOX | 51207-31-9 | TCDF2378 | 2,3,7,8-TCDF | 0.00115 | U | NG/L | 0.00115 | 0.00967 | N |
| WW | CDBS1045_W | CDLS1045S201 | N | 8/6/2014 | 265693.857 | 1786730.644 | 0 | 0 | SW8290 | DIOX | 39001-02-0 | OCDF | Octachlorodibenzofuran | 0.00445 | UJ | NG/L | 0.0031 | 0.0967 | N |
| WW | CDBS1045_W | CDLS1045S201 | N | 8/6/2014 | 265693.857 | 1786730.644 | 0 | 0 | SW8290 | DIOX | 3268-87-9 | OCDD | Octachlorodibenzo-p-dioxin | 0.221 | J | NG/L | 0.00631 | 0.0967 | Y |
| WW | CDBS1045_W | CDLS1045S201 | N | 8/6/2014 | 265693.857 | 1786730.644 | 0 | 0 | SW8290 | DIOX | 37871-00-4 | HPCDD | Total HpCDD | 0.116 | = | NG/L | 0.0035 | 0.0484 | Y |
| WW | CDBS1045_W | CDLS1045S201 | N | 8/6/2014 | 265693.857 | 1786730.644 | 0 | 0 | SW8290 | DIOX | 38998-75-3 | HPCDF | Total HpCDF | 0.00228 | U | NG/L | 0.000975 | 0.0484 | N |
| WW | CDBS1045_W | CDLS1045S201 | N | 8/6/2014 | 265693.857 | 1786730.644 | 0 | 0 | SW8290 | DIOX | 34465-46-8 | HXCDD | Total HxCDD | 0.057 | = | NG/L | 0.00271 | 0.0484 | Y |
| WW | CDBS1045_W | CDLS1045S201 | N | 8/6/2014 | 265693.857 | 1786730.644 | 0 | 0 | SW8290 | DIOX | 55684-94-1 | HXCDF | Total HxCDF | 0.00313 | J | NG/L | 0.000737 | 0.0484 | Y |
| WW | CDBS1045_W | CDLS1045S201 | N | 8/6/2014 | 265693.857 | 1786730.644 | 0 | 0 | SW8290 | DIOX | 36088-22-9 | PECDD | Total PeCDD | 0.00137 | U | NG/L | 0.00137 | 0.0484 | N |
| WW | CDBS1045_W | CDLS1045S201 | N | 8/6/2014 | 265693.857 | 1786730.644 | 0 | 0 | SW8290 | DIOX | 30402-15-4 | PECDF | Total PeCDF | 0.0024 | J | NG/L | 0.000586 | 0.0484 | Y |
| WW | CDBS1045_W | CDLS1045S201 | N | 8/6/2014 | 265693.857 | 1786730.644 | 0 | 0 | SW8290 | DIOX | 41903-57-5 | TCDD | Total TCDD | 0.000913 | U | NG/L | 0.000913 | 0.00967 | N |
| WW | CDBS1045_W | CDLS1045S201 | N | 8/6/2014 | 265693.857 | 1786730.644 | 0 | 0 | SW8290 | DIOX | 55722-27-5 | TCDF | Total TCDFs | 0.00224 | J | NG/L | 0.00115 | 0.00967 | Y |
| WW | CDBS1045_W | CDLS1045S201 | N | 8/6/2014 | 265693.857 | 1786730.644 | 0 | 0 | SW9060 | GENCHEM | 1-01-2 | TOC | Total Organic Carbon | 19 | = | MG/L | 10 | 10 | Y |
| WW | CDBS1045_W | CDLS1045S201 | N | 8/6/2014 | 265693.857 | 1786730.644 | 0 | 0 | SW8290 | DIOX | DIOXTEQM | DIOXTEQM | DIOXTEQM | 0.0008463 | = | NG/L | | | Y |

APPENDIX C-2

**Thermal Desorption Data**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| MATRIX | Station ID | Sample ID | Sample Type | Date Collected | Northing | Easting | Upper Depth | Lower Depth | Method | Parameter Class | CAS | Parameter ID | Parameter Name | Conc | Q | Unit | MDL | RL | Detected |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | ABBS1018_S | ABBS1018D103 | FD | 5/23/2014 | 267636.03 | 1788979.2 | 0 | 5 | M8015D | HC | EFHD (C12-C14) | 4786 | Diesel Range Organics (C12-C14) | 5000 | UJ | µg/kg | 5000 | 5000 | N |
| SO | ABBS1018_S | ABBS1018D103 | FD | 5/23/2014 | 267636.03 | 1788979.2 | 0 | 5 | M8015D | HC | EFHD (C15-C20) | EFHDC15C20 | Diesel Range Organics (C15-C20) | 2700 | J | µg/kg | 1600 | 5000 | Y |
| SO | ABBS1018_S | ABBS1018D103 | FD | 5/23/2014 | 267636.03 | 1788979.2 | 0 | 5 | M8015D | HC | EFHD (C21-C30) | EFHDC21C30 | Diesel Range Organics (C21-C30) | 8100 | J | µg/kg | 5000 | 5000 | Y |
| SO | ABBS1018_S | ABBS1018D103 | FD | 5/23/2014 | 267636.03 | 1788979.2 | 0 | 5 | M8015D | HC | EFHD (C8-C11) | EFHD (C8-C11) | Diesel Range Organics (C8-C11) | 3500 | J | µg/kg | 1600 | 5000 | Y |
| SO | ABBS1018_S | ABBS1018D103 | FD | 5/23/2014 | 267636.03 | 1788979.2 | 0 | 5 | SW8015B | HC | GRO C4-C12 | 4541 | GRO (C4-C12) | 1700 | J | µg/kg | 510 | 510 | Y |
| SO | ABBS1018_S | ABBS1018D103 | FD | 5/23/2014 | 267636.03 | 1788979.2 | 0 | 5 | M8015D | HC | EFHD (C31-C40) | 4503 | ORO (C31-C40) | 8800 | J | µg/kg | 5000 | 5000 | Y |
| SO | ABBS1018_S | ABBS1018D103 | FD | 5/23/2014 | 267636.03 | 1788979.2 | 0 | 5 | SW6010B | INO | 7440-36-0 | SB | Antimony | 0.146 | U | mg/kg | 0.983 | 0.983 | N |
| SO | ABBS1018_S | ABBS1018S100 | N | 5/2/2014 | 267636.03 | 1788979.2 | 0 | 5 | M8015D | HC | EFHD (C12-C14) | 4786 | Diesel Range Organics (C12-C14) | 5400 | U | µg/kg | 5400 | 5400 | N |
| SO | ABBS1018_S | ABBS1018S100 | N | 5/2/2014 | 267636.03 | 1788979.2 | 0 | 5 | M8015D | HC | EFHD (C15-C20) | EFHDC15C20 | Diesel Range Organics (C15-C20) | 5400 | U | µg/kg | 5400 | 5400 | N |
| SO | ABBS1018_S | ABBS1018S100 | N | 5/2/2014 | 267636.03 | 1788979.2 | 0 | 5 | M8015D | HC | EFHD (C21-C30) | EFHDC21C30 | Diesel Range Organics (C21-C30) | 5400 | U | µg/kg | 5400 | 5400 | N |
| SO | ABBS1018_S | ABBS1018S100 | N | 5/2/2014 | 267636.03 | 1788979.2 | 0 | 5 | M8015D | HC | EFHD (C8-C11) | EFHD (C8-C11) | Diesel Range Organics (C8-C11) | 5400 | U | µg/kg | 5400 | 5400 | N |
| SO | ABBS1018_S | ABBS1018S100 | N | 5/2/2014 | 267636.03 | 1788979.2 | 0 | 5 | SW8015B | HC | GRO C4-C12 | 4541 | GRO (C4-C12) | 560 | U | µg/kg | 560 | 560 | N |
| SO | ABBS1018_S | ABBS1018S100 | N | 5/2/2014 | 267636.03 | 1788979.2 | 0 | 5 | M8015D | HC | EFHD (C31-C40) | 4503 | ORO (C31-C40) | 5400 | U | µg/kg | 5400 | 5400 | N |
| SO | ABBS1018_S | ABBS1018S101 | N | 5/14/2014 | 267636.03 | 1788979.2 | 0 | 5 | M8015D | HC | EFHD (C12-C14) | 4786 | Diesel Range Organics (C12-C14) | 5400 | UJ | µg/kg | 5400 | 5400 | N |
| SO | ABBS1018_S | ABBS1018S101 | N | 5/14/2014 | 267636.03 | 1788979.2 | 0 | 5 | M8015D | HC | EFHD (C15-C20) | EFHDC15C20 | Diesel Range Organics (C15-C20) | 5400 | UJ | µg/kg | 5400 | 5400 | N |
| SO | ABBS1018_S | ABBS1018S101 | N | 5/14/2014 | 267636.03 | 1788979.2 | 0 | 5 | M8015D | HC | EFHD (C21-C30) | EFHDC21C30 | Diesel Range Organics (C21-C30) | 36000 | J | µg/kg | 5400 | 5400 | Y |
| SO | ABBS1018_S | ABBS1018S101 | N | 5/14/2014 | 267636.03 | 1788979.2 | 0 | 5 | M8015D | HC | EFHD (C8-C11) | EFHD (C8-C11) | Diesel Range Organics (C8-C11) | 5400 | UJ | µg/kg | 5400 | 5400 | N |
| SO | ABBS1018_S | ABBS1018S101 | N | 5/14/2014 | 267636.03 | 1788979.2 | 0 | 5 | SW8015B | HC | GRO C4-C12 | 4541 | GRO (C4-C12) | 540 | UJ | µg/kg | 540 | 540 | N |
| SO | ABBS1018_S | ABBS1018S101 | N | 5/14/2014 | 267636.03 | 1788979.2 | 0 | 5 | M8015D | HC | EFHD (C31-C40) | 4503 | ORO (C31-C40) | 48000 | J | µg/kg | 5400 | 5400 | Y |
| SO | ABBS1018_S | ABBS1018S101 | N | 5/14/2014 | 267636.03 | 1788979.2 | 0 | 5 | SW6010B | INO | 7440-36-0 | SB | Antimony | 0.16 | U | mg/kg | 1.08 | 1.08 | N |
| SO | ABBS1018_S | ABBS1018S102 | N | 5/23/2014 | 267636.03 | 1788979.2 | 0 | 5 | M8015D | HC | EFHD (C12-C14) | 4786 | Diesel Range Organics (C12-C14) | 5000 | UJ | µg/kg | 5000 | 5000 | N |
| SO | ABBS1018_S | ABBS1018S102 | N | 5/23/2014 | 267636.03 | 1788979.2 | 0 | 5 | M8015D | HC | EFHD (C15-C20) | EFHDC15C20 | Diesel Range Organics (C15-C20) | 5000 | UJ | µg/kg | 5000 | 5000 | N |
| SO | ABBS1018_S | ABBS1018S102 | N | 5/23/2014 | 267636.03 | 1788979.2 | 0 | 5 | M8015D | HC | EFHD (C21-C30) | EFHDC21C30 | Diesel Range Organics (C21-C30) | 8200 | J | µg/kg | 5000 | 5000 | Y |
| SO | ABBS1018_S | ABBS1018S102 | N | 5/23/2014 | 267636.03 | 1788979.2 | 0 | 5 | M8015D | HC | EFHD (C8-C11) | EFHD (C8-C11) | Diesel Range Organics (C8-C11) | 5000 | UJ | µg/kg | 5000 | 5000 | N |
| SO | ABBS1018_S | ABBS1018S102 | N | 5/23/2014 | 267636.03 | 1788979.2 | 0 | 5 | SW8015B | HC | GRO C4-C12 | 4541 | GRO (C4-C12) | 1200 | J | µg/kg | 510 | 510 | Y |
| SO | ABBS1018_S | ABBS1018S102 | N | 5/23/2014 | 267636.03 | 1788979.2 | 0 | 5 | M8015D | HC | EFHD (C31-C40) | 4503 | ORO (C31-C40) | 19000 | J | µg/kg | 5000 | 5000 | Y |
| SO | ABBS1018_S | ABBS1018S102 | N | 5/23/2014 | 267636.03 | 1788979.2 | 0 | 5 | SW6010B | INO | 7440-36-0 | SB | Antimony | 0.143 | U | mg/kg | 0.962 | 0.962 | N |
| SO | ABBS1018_S | ABBS1018S103 | N | 5/23/2014 | 267636.03 | 1788979.2 | 0 | 5 | M8015D | HC | EFHD (C12-C14) | 4786 | Diesel Range Organics (C12-C14) | 5000 | UJ | µg/kg | 5000 | 5000 | N |
| SO | ABBS1018_S | ABBS1018S103 | N | 5/23/2014 | 267636.03 | 1788979.2 | 0 | 5 | M8015D | HC | EFHD (C15-C20) | EFHDC15C20 | Diesel Range Organics (C15-C20) | 3300 | J | µg/kg | 1600 | 5000 | Y |
| SO | ABBS1018_S | ABBS1018S103 | N | 5/23/2014 | 267636.03 | 1788979.2 | 0 | 5 | M8015D | HC | EFHD (C21-C30) | EFHDC21C30 | Diesel Range Organics (C21-C30) | 10000 | J | µg/kg | 5000 | 5000 | Y |
| SO | ABBS1018_S | ABBS1018S103 | N | 5/23/2014 | 267636.03 | 1788979.2 | 0 | 5 | M8015D | HC | EFHD (C8-C11) | EFHD (C8-C11) | Diesel Range Organics (C8-C11) | 3300 | J | µg/kg | 1600 | 5000 | Y |
| SO | ABBS1018_S | ABBS1018S103 | N | 5/23/2014 | 267636.03 | 1788979.2 | 0 | 5 | SW8015B | HC | GRO C4-C12 | 4541 | GRO (C4-C12) | 1400 | J | µg/kg | 490 | 490 | Y |
| SO | ABBS1018_S | ABBS1018S103 | N | 5/23/2014 | 267636.03 | 1788979.2 | 0 | 5 | M8015D | HC | EFHD (C31-C40) | 4503 | ORO (C31-C40) | 11000 | J | µg/kg | 5000 | 5000 | Y |
| SO | ABBS1018_S | ABBS1018S103 | N | 5/23/2014 | 267636.03 | 1788979.2 | 0 | 5 | SW6010B | INO | 7440-36-0 | SB | Antimony | 0.146 | U | mg/kg | 0.979 | 0.979 | N |
| SO | ABBS1018_S | ABBS1018S104 | N | 5/23/2014 | 267636.03 | 1788979.2 | 0 | 5 | M8015D | HC | EFHD (C12-C14) | 4786 | Diesel Range Organics (C12-C14) | 5000 | UJ | µg/kg | 5000 | 5000 | N |
| SO | ABBS1018_S | ABBS1018S104 | N | 5/23/2014 | 267636.03 | 1788979.2 | 0 | 5 | M8015D | HC | EFHD (C15-C20) | EFHDC15C20 | Diesel Range Organics (C15-C20) | 5000 | UJ | µg/kg | 5000 | 5000 | N |
| SO | ABBS1018_S | ABBS1018S104 | N | 5/23/2014 | 267636.03 | 1788979.2 | 0 | 5 | M8015D | HC | EFHD (C21-C30) | EFHDC21C30 | Diesel Range Organics (C21-C30) | 5000 | UJ | µg/kg | 5000 | 5000 | N |
| SO | ABBS1018_S | ABBS1018S104 | N | 5/23/2014 | 267636.03 | 1788979.2 | 0 | 5 | M8015D | HC | EFHD (C8-C11) | EFHD (C8-C11) | Diesel Range Organics (C8-C11) | 5000 | UJ | µg/kg | 5000 | 5000 | N |
| SO | ABBS1018_S | ABBS1018S104 | N | 5/23/2014 | 267636.03 | 1788979.2 | 0 | 5 | SW8015B | HC | GRO C4-C12 | 4541 | GRO (C4-C12) | 480 | UJ | µg/kg | 480 | 480 | N |
| SO | ABBS1018_S | ABBS1018S104 | N | 5/23/2014 | 267636.03 | 1788979.2 | 0 | 5 | M8015D | HC | EFHD (C31-C40) | 4503 | ORO (C31-C40) | 5000 | UJ | µg/kg | 5000 | 5000 | N |
| SO | ABBS1018_S | ABBS1018S104 | N | 5/23/2014 | 267636.03 | 1788979.2 | 0 | 5 | SW6010B | INO | 7440-36-0 | SB | Antimony | 0.146 | U | mg/kg | 0.979 | 0.979 | N |
| SO | ABBS1018_S | ABBS1018S105 | N | 5/27/2014 | 267636.03 | 1788979.2 | 0 | 5 | M8015D | HC | EFHD (C12-C14) | 4786 | Diesel Range Organics (C12-C14) | 5000 | UJ | µg/kg | 5000 | 5000 | N |
| SO | ABBS1018_S | ABBS1018S105 | N | 5/27/2014 | 267636.03 | 1788979.2 | 0 | 5 | M8015D | HC | EFHD (C15-C20) | EFHDC15C20 | Diesel Range Organics (C15-C20) | 5000 | UJ | µg/kg | 5000 | 5000 | N |
| SO | ABBS1018_S | ABBS1018S105 | N | 5/27/2014 | 267636.03 | 1788979.2 | 0 | 5 | M8015D | HC | EFHD (C21-C30) | EFHDC21C30 | Diesel Range Organics (C21-C30) | 5000 | UJ | µg/kg | 5000 | 5000 | N |
| SO | ABBS1018_S | ABBS1018S105 | N | 5/27/2014 | 267636.03 | 1788979.2 | 0 | 5 | M8015D | HC | EFHD (C8-C11) | EFHD (C8-C11) | Diesel Range Organics (C8-C11) | 5000 | UJ | µg/kg | 5000 | 5000 | N |
| SO | ABBS1018_S | ABBS1018S105 | N | 5/27/2014 | 267636.03 | 1788979.2 | 0 | 5 | SW8015B | HC | GRO C4-C12 | 4541 | GRO (C4-C12) | 500 | UJ | µg/kg | 500 | 500 | N |
| SO | ABBS1018_S | ABBS1018S105 | N | 5/27/2014 | 267636.03 | 1788979.2 | 0 | 5 | M8015D | HC | EFHD (C31-C40) | 4503 | ORO (C31-C40) | 5000 | UJ | µg/kg | 5000 | 5000 | N |
| SO | ABBS1018_S | ABBS1018S105 | N | 5/27/2014 | 267636.03 | 1788979.2 | 0 | 5 | SW6010B | INO | 7440-36-0 | SB | Antimony | 0.148 | U | mg/kg | 0.993 | 0.993 | N |
| SO | ABBS1018_S | ABBS1018S200 | N | 5/2/2014 | 267636.03 | 1788979.2 | 5 | 9.75 | M8015D | HC | EFHD (C12-C14) | 4786 | Diesel Range Organics (C12-C14) | 3300000 | = | µg/kg | 28000 | 28000 | Y |
| SO | ABBS1018_S | ABBS1018S200 | N | 5/2/2014 | 267636.03 | 1788979.2 | 5 | 9.75 | M8015D | HC | EFHD (C15-C20) | EFHDC15C20 | Diesel Range Organics (C15-C20) | 1300000 | = | µg/kg | 28000 | 28000 | Y |
| SO | ABBS1018_S | ABBS1018S200 | N | 5/2/2014 | 267636.03 | 1788979.2 | 5 | 9.75 | M8015D | HC | EFHD (C21-C30) | EFHDC21C30 | Diesel Range Organics (C21-C30) | 28000 | U | µg/kg | 28000 | 28000 | N |
| SO | ABBS1018_S | ABBS1018S200 | N | 5/2/2014 | 267636.03 | 1788979.2 | 5 | 9.75 | M8015D | HC | EFHD (C8-C11) | EFHD (C8-C11) | Diesel Range Organics (C8-C11) | 870000 | = | µg/kg | 28000 | 28000 | Y |
| SO | ABBS1018_S | ABBS1018S200 | N | 5/2/2014 | 267636.03 | 1788979.2 | 5 | 9.75 | SW8015B | HC | GRO C4-C12 | 4541 | GRO (C4-C12) | 1300000 | = | µg/kg | 220000 | 220000 | Y |
| SO | ABBS1018_S | ABBS1018S200 | N | 5/2/2014 | 267636.03 | 1788979.2 | 5 | 9.75 | M8015D | HC | EFHD (C31-C40) | 4503 | ORO (C31-C40) | 28000 | U | µg/kg | 28000 | 28000 | N |
| SO | ABBS1018_S | ABBS1018S201 | N | 5/15/2014 | 267636.03 | 1788979.2 | 0 | 9.75 | M8015D | HC | EFHD (C12-C14) | 4786 | Diesel Range Organics (C12-C14) | 5300 | UJ | µg/kg | 5300 | 5300 | N |
| SO | ABBS1018_S | ABBS1018S201 | N | 5/15/2014 | 267636.03 | 1788979.2 | 0 | 9.75 | M8015D | HC | EFHD (C15-C20) | EFHDC15C20 | Diesel Range Organics (C15-C20) | 5300 | UJ | µg/kg | 5300 | 5300 | N |
| SO | ABBS1018_S | ABBS1018S201 | N | 5/15/2014 | 267636.03 | 1788979.2 | 0 | 9.75 | M8015D | HC | EFHD (C21-C30) | EFHDC21C30 | Diesel Range Organics (C21-C30) | 3900 | J | µg/kg | 1700 | 5300 | Y |
| SO | ABBS1018_S | ABBS1018S201 | N | 5/15/2014 | 267636.03 | 1788979.2 | 0 | 9.75 | M8015D | HC | EFHD (C8-C11) | EFHD (C8-C11) | Diesel Range Organics (C8-C11) | 5300 | UJ | µg/kg | 5300 | 5300 | N |
| SO | ABBS1018_S | ABBS1018S201 | N | 5/15/2014 | 267636.03 | 1788979.2 | 0 | 9.75 | SW8015B | HC | GRO C4-C12 | 4541 | GRO (C4-C12) | 520 | UJ | µg/kg | 520 | 520 | N |
| SO | ABBS1018_S | ABBS1018S201 | N | 5/15/2014 | 267636.03 | 1788979.2 | 0 | 9.75 | M8015D | HC | EFHD (C31-C40) | 4503 | ORO (C31-C40) | 3300 | J | µg/kg | 1700 | 5300 | Y |
| SO | ABBS1018_S | ABBS1018S201 | N | 5/15/2014 | 267636.03 | 1788979.2 | 0 | 9.75 | SW6010B | INO | 7440-36-0 | SB | Antimony | 0.164 | U | mg/kg | 1.1 | 1.1 | N |
| SO | ABBS1018_S | ABBS1018S202 | N | 5/28/2014 | 267636.03 | 1788979.2 | 0 | 9.75 | M8015D | HC | EFHD (C12-C14) | 4786 | Diesel Range Organics (C12-C14) | 5000 | UJ | µg/kg | 5000 | 5000 | N |
| SO | ABBS1018_S | ABBS1018S202 | N | 5/28/2014 | 267636.03 | 1788979.2 | 0 | 9.75 | M8015D | HC | EFHD (C15-C20) | EFHDC15C20 | Diesel Range Organics (C15-C20) | 5000 | UJ | µg/kg | 5000 | 5000 | N |
| SO | ABBS1018_S | ABBS1018S202 | N | 5/28/2014 | 267636.03 | 1788979.2 | 0 | 9.75 | M8015D | HC | EFHD (C21-C30) | EFHDC21C30 | Diesel Range Organics (C21-C30) | 5000 | UJ | µg/kg | 5000 | 5000 | N |
| SO | ABBS1018_S | ABBS1018S202 | N | 5/28/2014 | 267636.03 | 1788979.2 | 0 | 9.75 | M8015D | HC | EFHD (C8-C11) | EFHD (C8-C11) | Diesel Range Organics (C8-C11) | 5000 | UJ | µg/kg | 5000 | 5000 | N |
| SO | ABBS1018_S | ABBS1018S202 | N | 5/28/2014 | 267636.03 | 1788979.2 | 0 | 9.75 | SW8015B | HC | GRO C4-C12 | 4541 | GRO (C4-C12) | 840 | J | µg/kg | 500 | 500 | Y |
| SO | ABBS1018_S | ABBS1018S202 | N | 5/28/2014 | 267636.03 | 1788979.2 | 0 | 9.75 | M8015D | HC | EFHD (C31-C40) | 4503 | ORO (C31-C40) | 5000 | UJ | µg/kg | 5000 | 5000 | N |
| SO | ABBS1018_S | ABBS1018S202 | N | 5/28/2014 | 267636.03 | 1788979.2 | 0 | 9.75 | SW6010B | INO | 7440-36-0 | SB | Antimony | 0.149 | U | mg/kg | 1 | 1 | N |
| SO | ABBS1018_S | ABBS1018S203 | N | 5/28/2014 | 267636.03 | 1788979.2 | 0 | 9.75 | M8015D | HC | EFHD (C12-C14) | 4786 | Diesel Range Organics (C12-C14) | 5000 | UJ | µg/kg | 5000 | 5000 | N |
| SO | ABBS1018_S | ABBS1018S203 | N | 5/28/2014 | 267636.03 | 1788979.2 | 0 | 9.75 | M8015D | HC | EFHD (C15-C20) | EFHDC15C20 | Diesel Range Organics (C15-C20) | 5000 | UJ | µg/kg | 5000 | 5000 | N |
| SO | ABBS1018_S | ABBS1018S203 | N | 5/28/2014 | 267636.03 | 1788979.2 | 0 | 9.75 | M8015D | HC | EFHD (C21-C30) | EFHDC21C30 | Diesel Range Organics (C21-C30) | 5000 | UJ | µg/kg | 5000 | 5000 | N |
| SO | ABBS1018_S | ABBS1018S203 | N | 5/28/2014 | 267636.03 | 1788979.2 | 0 | 9.75 | M8015D | HC | EFHD (C8-C11) | EFHD (C8-C11) | Diesel Range Organics (C8-C11) | 5000 | UJ | µg/kg | 5000 | 5000 | N |
| SO | ABBS1018_S | ABBS1018S203 | N | 5/28/2014 | 267636.03 | 1788979.2 | 0 | 9.75 | SW8015B | HC | GRO C4-C12 | 4541 | GRO (C4-C12) | 730 | J | µg/kg | 500 | 500 | Y |
| SO | ABBS1018_S | ABBS1018S203 | N | 5/28/2014 | 267636.03 | 1788979.2 | 0 | 9.75 | M8015D | HC | EFHD (C31-C40) | 4503 | ORO (C31-C40) | 5000 | UJ | µg/kg | 5000 | 5000 | N |

APPENDIX C-2

**Thermal Desorption Data**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| MATRIX | Station ID | Sample ID | Sample Type | Date Collected | Northing | Easting | Upper Depth | Lower Depth | Method | Parameter Class | CAS | Parameter ID | Parameter Name | Conc | Q | Unit | MDL | RL | Detected |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | ABBS1018_S | ABBS1018S203 | N | 5/28/2014 | 267636.03 | 1788979.2 | 0 | 9.75 | SW6010B | INO | 7440-36-0 | SB | Antimony | 0.149 | UJ | mg/kg | 1 | 1 | N |
| SO | ABBS1018_S | ABBS1018S204 | N | 5/28/2014 | 267636.03 | 1788979.2 | 0 | 9.75 | M8015D | HC | EFHD (C12-C14) | 4786 | Diesel Range Organics (C12-C14) | 5000 | UJ | µg/kg | 5000 | 5000 | N |
| SO | ABBS1018_S | ABBS1018S204 | N | 5/28/2014 | 267636.03 | 1788979.2 | 0 | 9.75 | M8015D | HC | EFHD (C15-C20) | EFHDC15C20 | Diesel Range Organics (C15-C20) | 5000 | UJ | µg/kg | 5000 | 5000 | N |
| SO | ABBS1018_S | ABBS1018S204 | N | 5/28/2014 | 267636.03 | 1788979.2 | 0 | 9.75 | M8015D | HC | EFHD (C21-C30) | EFHDC21C30 | Diesel Range Organics (C21-C30) | 5000 | UJ | µg/kg | 5000 | 5000 | N |
| SO | ABBS1018_S | ABBS1018S204 | N | 5/28/2014 | 267636.03 | 1788979.2 | 0 | 9.75 | M8015D | HC | EFHD (C8-C11) | EFHD (C8-C11) | Diesel Range Organics (C8-C11) | 5000 | UJ | µg/kg | 5000 | 5000 | N |
| SO | ABBS1018_S | ABBS1018S204 | N | 5/28/2014 | 267636.03 | 1788979.2 | 0 | 9.75 | SW8015B | HC | GRO C4-C12 | 4541 | GRO (C4-C12) | 510 | UJ | µg/kg | 510 | 510 | N |
| SO | ABBS1018_S | ABBS1018S204 | N | 5/28/2014 | 267636.03 | 1788979.2 | 0 | 9.75 | M8015D | HC | EFHD (C31-C40) | 4503 | ORO (C31-C40) | 5000 | UJ | µg/kg | 5000 | 5000 | N |
| SO | ABBS1018_S | ABBS1018S204 | N | 5/28/2014 | 267636.03 | 1788979.2 | 0 | 9.75 | SW6010B | INO | 7440-36-0 | SB | Antimony | 0.143 | U | mg/kg | 0.96 | 0.96 | N |
| SO | ABBS1018_S | ABBS1018S205 | N | 5/29/2014 | 267636.03 | 1788979.2 | 0 | 9.75 | M8015D | HC | EFHD (C12-C14) | 4786 | Diesel Range Organics (C12-C14) | 5000 | UJ | µg/kg | 5000 | 5000 | N |
| SO | ABBS1018_S | ABBS1018S205 | N | 5/29/2014 | 267636.03 | 1788979.2 | 0 | 9.75 | M8015D | HC | EFHD (C15-C20) | EFHDC15C20 | Diesel Range Organics (C15-C20) | 5000 | UJ | µg/kg | 5000 | 5000 | N |
| SO | ABBS1018_S | ABBS1018S205 | N | 5/29/2014 | 267636.03 | 1788979.2 | 0 | 9.75 | M8015D | HC | EFHD (C21-C30) | EFHDC21C30 | Diesel Range Organics (C21-C30) | 5000 | UJ | µg/kg | 5000 | 5000 | N |
| SO | ABBS1018_S | ABBS1018S205 | N | 5/29/2014 | 267636.03 | 1788979.2 | 0 | 9.75 | M8015D | HC | EFHD (C8-C11) | EFHD (C8-C11) | Diesel Range Organics (C8-C11) | 5000 | UJ | µg/kg | 5000 | 5000 | N |
| SO | ABBS1018_S | ABBS1018S205 | N | 5/29/2014 | 267636.03 | 1788979.2 | 0 | 9.75 | SW8015B | HC | GRO C4-C12 | 4541 | GRO (C4-C12) | 500 | UJ | µg/kg | 500 | 500 | N |
| SO | ABBS1018_S | ABBS1018S205 | N | 5/29/2014 | 267636.03 | 1788979.2 | 0 | 9.75 | M8015D | HC | EFHD (C31-C40) | 4503 | ORO (C31-C40) | 5000 | UJ | µg/kg | 5000 | 5000 | N |
| SO | ABBS1018_S | ABBS1018S205 | N | 5/29/2014 | 267636.03 | 1788979.2 | 0 | 9.75 | SW6010B | INO | 7440-36-0 | SB | Antimony | 0.149 | U | mg/kg | 0.999 | 0.999 | N |
| SO | ABBS1018_S | ABBS1018S205S | FS | 5/29/2014 | 267636.03 | 1788979.2 | 0 | 9.75 | M8015D | HC | EFHD (C12-C14) | 4786 | Diesel Range Organics (C12-C14) | 5000 | UJ | µg/kg | 2500 | 5000 | N |
| SO | ABBS1018_S | ABBS1018S205S | FS | 5/29/2014 | 267636.03 | 1788979.2 | 0 | 9.75 | M8015D | HC | EFHD (C15-C20) | EFHDC15C20 | Diesel Range Organics (C15-C20) | 5000 | UJ | µg/kg | 2500 | 5000 | N |
| SO | ABBS1018_S | ABBS1018S205S | FS | 5/29/2014 | 267636.03 | 1788979.2 | 0 | 9.75 | M8015D | HC | EFHD (C21-C30) | EFHDC21C30 | Diesel Range Organics (C21-C30) | 5000 | UJ | µg/kg | 2500 | 5000 | N |
| SO | ABBS1018_S | ABBS1018S205S | FS | 5/29/2014 | 267636.03 | 1788979.2 | 0 | 9.75 | M8015D | HC | EFHD (C8-C11) | EFHD (C8-C11) | Diesel Range Organics (C8-C11) | 5000 | UJ | µg/kg | 2500 | 5000 | N |
| SO | ABBS1018_S | ABBS1018S205S | FS | 5/29/2014 | 267636.03 | 1788979.2 | 0 | 9.75 | M8015D | HC | EFHD (C31-C40) | 4503 | ORO (C31-C40) | 10000 | UJ | µg/kg | 5000 | 10000 | N |
| SO | ABBS1018_S | ABBS1018S205S | FS | 5/29/2014 | 267636.03 | 1788979.2 | 0 | 9.75 | M8015D | HC | TPH | 4793 | TOTAL EFH(C8-C40) | 5000 | UJ | µg/kg | 2500 | 5000 | N |
| SO | ABBS1018_S | ABBS1018S205S | FS | 5/29/2014 | 267636.03 | 1788979.2 | 0 | 9.75 | SW6020 | INO | 7440-36-0 | SB | Antimony | 0.197 | U | mg/kg | 0.197 | 0.986 | N |

# Appendix D
# Bravo Test Stand Bioventing Results
# (Initial Bioventing Effort)

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APPENDIX D-1

**Test Stand Biovent Analytical Data**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | FSP SL | Units | FSP Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| GS | BVSVP-1 | BVSVP1SVS001 | N | 18 Aug 2014 | 3.5 - 5.5 | TO15 | OTHER | C4 as n-Butane | 15000 UJ | | 15000 | | µg/m3 | | NC |
| GS | BVSVP-1 | BVSVP1SVS001 | N | 18 Aug 2014 | 3.5 - 5.5 | TO15 | OTHER | C5 as n-Pentane | 15000 UJ | | 15000 | | µg/m3 | | NC |
| GS | BVSVP-1 | BVSVP1SVS001 | N | 18 Aug 2014 | 3.5 - 5.5 | TO15 | OTHER | C7 as n-Heptane | 15000 UJ | | 15000 | | µg/m3 | | NC |
| GS | BVSVP-1 | BVSVP1SVS001 | N | 18 Aug 2014 | 3.5 - 5.5 | TO15 | OTHER | Dodecane | 15000 UJ | | 15000 | | µg/m3 | | NC |
| GS | BVSVP-1 | BVSVP1SVS001 | N | 18 Aug 2014 | 3.5 - 5.5 | TO15 | OTHER | n-Decane | 15000 UJ | | 15000 | | µg/m3 | | NC |
| GS | BVSVP-1 | BVSVP1SVS001 | N | 18 Aug 2014 | 3.5 - 5.5 | TO15 | OTHER | n-Hexane | 15000 UJ | | 15000 | | µg/m3 | | NC |
| GS | BVSVP-1 | BVSVP1SVS001 | N | 18 Aug 2014 | 3.5 - 5.5 | TO15 | OTHER | Nonane | 15000 UJ | | 15000 | | µg/m3 | | NC |
| GS | BVSVP-1 | BVSVP1SVS001 | N | 18 Aug 2014 | 3.5 - 5.5 | TO15 | OTHER | Undecane | 15000 UJ | | 15000 | | µg/m3 | | NC |
| GS | BVSVP-1 | BVSVP1SVS001 | N | 18 Aug 2014 | 3.5 - 5.5 | TO15 | VOC | 1,1,1,2-Tetrachloroethane | 750 U | | | | µg/m3 | | RL |
| GS | BVSVP-1 | BVSVP1SVS001 | N | 18 Aug 2014 | 3.5 - 5.5 | TO15 | VOC | 1,1,1-Trichloroethane | 2500 = | 260 | 750 | | µg/m3 | | Y |
| GS | BVSVP-1 | BVSVP1SVS001 | N | 18 Aug 2014 | 3.5 - 5.5 | TO15 | VOC | 1,1,2,2-Tetrachloroethane | 750 U | 230 | 750 | | µg/m3 | | RL |
| GS | BVSVP-1 | BVSVP1SVS001 | N | 18 Aug 2014 | 3.5 - 5.5 | TO15 | VOC | 1,1,2-Trichloro-1,2,2-trifluoroethane | 2800 = | 260 | 750 | | µg/m3 | | Y |
| GS | BVSVP-1 | BVSVP1SVS001 | N | 18 Aug 2014 | 3.5 - 5.5 | TO15 | VOC | 1,1,2-Trichloroethane | 750 U | 240 | 750 | | µg/m3 | | RL |
| GS | BVSVP-1 | BVSVP1SVS001 | N | 18 Aug 2014 | 3.5 - 5.5 | TO15 | VOC | 1,1-Dichloroethane | 750 U | 240 | 750 | | µg/m3 | | RL |
| GS | BVSVP-1 | BVSVP1SVS001 | N | 18 Aug 2014 | 3.5 - 5.5 | TO15 | VOC | 1,1-Dichloroethene | 750 U | 260 | 750 | | µg/m3 | | RL |
| GS | BVSVP-1 | BVSVP1SVS001 | N | 18 Aug 2014 | 3.5 - 5.5 | TO15 | VOC | 1,2-Dichloroethane | 750 U | 240 | 750 | | µg/m3 | | RL |
| GS | BVSVP-1 | BVSVP1SVS001 | N | 18 Aug 2014 | 3.5 - 5.5 | TO15 | VOC | Benzene | 750 U | 240 | 750 | | µg/m3 | | RL |
| GS | BVSVP-1 | BVSVP1SVS001 | N | 18 Aug 2014 | 3.5 - 5.5 | TO15 | VOC | Carbon tetrachloride | 750 U | 230 | 750 | | µg/m3 | | RL |
| GS | BVSVP-1 | BVSVP1SVS001 | N | 18 Aug 2014 | 3.5 - 5.5 | TO15 | VOC | Chloroethane | 750 U | 260 | 750 | | µg/m3 | | RL |
| GS | BVSVP-1 | BVSVP1SVS001 | N | 18 Aug 2014 | 3.5 - 5.5 | TO15 | VOC | cis-1,2-Dichloroethene | 750 U | 240 | 750 | | µg/m3 | | RL |
| GS | BVSVP-1 | BVSVP1SVS001 | N | 18 Aug 2014 | 3.5 - 5.5 | TO15 | VOC | Dichlorodifluoromethane | 750 U | 260 | 750 | | µg/m3 | | RL |
| GS | BVSVP-1 | BVSVP1SVS001 | N | 18 Aug 2014 | 3.5 - 5.5 | TO15 | VOC | Ethylbenzene | 750 U | 240 | 750 | | µg/m3 | | RL |
| GS | BVSVP-1 | BVSVP1SVS001 | N | 18 Aug 2014 | 3.5 - 5.5 | TO15 | VOC | m,p-Xylenes | 1500 U | 450 | 1500 | | µg/m3 | | RL |
| GS | BVSVP-1 | BVSVP1SVS001 | N | 18 Aug 2014 | 3.5 - 5.5 | TO15 | VOC | Methylene chloride | 750 U | 260 | 750 | | µg/m3 | | N |
| GS | BVSVP-1 | BVSVP1SVS001 | N | 18 Aug 2014 | 3.5 - 5.5 | TO15 | VOC | n-Octane | 15000 UJ | | 15000 | | µg/m3 | | NC |
| GS | BVSVP-1 | BVSVP1SVS001 | N | 18 Aug 2014 | 3.5 - 5.5 | TO15 | VOC | o-Xylene | 750 U | 230 | 750 | | µg/m3 | | RL |
| GS | BVSVP-1 | BVSVP1SVS001 | N | 18 Aug 2014 | 3.5 - 5.5 | TO15 | VOC | Propane | 15000 UJ | | 15000 | | µg/m3 | | NC |
| GS | BVSVP-1 | BVSVP1SVS001 | N | 18 Aug 2014 | 3.5 - 5.5 | TO15 | VOC | Tetrachloroethene | 750 U | 210 | 750 | | µg/m3 | | RL |
| GS | BVSVP-1 | BVSVP1SVS001 | N | 18 Aug 2014 | 3.5 - 5.5 | TO15 | VOC | Toluene | 750 U | 260 | 750 | | µg/m3 | | RL |
| GS | BVSVP-1 | BVSVP1SVS001 | N | 18 Aug 2014 | 3.5 - 5.5 | TO15 | VOC | trans-1,2-Dichloroethene | 750 U | 290 | 750 | | µg/m3 | | RL |
| GS | BVSVP-1 | BVSVP1SVS001 | N | 18 Aug 2014 | 3.5 - 5.5 | TO15 | VOC | Trichloroethene | 190000 = | 420 | 1500 | | µg/m3 | | Y |
| GS | BVSVP-1 | BVSVP1SVS001 | N | 18 Aug 2014 | 3.5 - 5.5 | TO15 | VOC | Trichlorofluoromethane | 750 U | 260 | 750 | | µg/m3 | | RL |
| GS | BVSVP-1 | BVSVP1SVS001 | N | 18 Aug 2014 | 3.5 - 5.5 | TO15 | VOC | Trichloromethane (Chloroform) | 750 U | 260 | 750 | | µg/m3 | | RL |
| GS | BVSVP-1 | BVSVP1SVS001 | N | 18 Aug 2014 | 3.5 - 5.5 | TO15 | VOC | Vinyl chloride | 750 U | 260 | 750 | | µg/m3 | | RL |
| GS | BVSVP-1 | BVSVP1SVS002 | N | 11 Sep 2014 | 3.5 - 5.5 | TO15 | OTHER | C4 as n-Butane | 80 U | | 80 | | µg/m3 | | NC |
| GS | BVSVP-1 | BVSVP1SVS002 | N | 11 Sep 2014 | 3.5 - 5.5 | TO15 | OTHER | C5 as n-Pentane | 80 U | | 80 | | µg/m3 | | NC |
| GS | BVSVP-1 | BVSVP1SVS002 | N | 11 Sep 2014 | 3.5 - 5.5 | TO15 | OTHER | C7 as n-Heptane | 80 U | | 80 | | µg/m3 | | NC |
| GS | BVSVP-1 | BVSVP1SVS002 | N | 11 Sep 2014 | 3.5 - 5.5 | TO15 | OTHER | Dodecane | 80 U | | 80 | | µg/m3 | | NC |

APPENDIX D-1

**Test Stand Biovent Analytical Data**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | FSP SL | Units | FSP Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| GS | BVSVP-1 | BVSVP1SVS002 | N | 11 Sep 2014 | 3.5 - 5.5 | TO15 | OTHER | n-Decane | 80 U | | 80 | | µg/m3 | | NC |
| GS | BVSVP-1 | BVSVP1SVS002 | N | 11 Sep 2014 | 3.5 - 5.5 | TO15 | OTHER | n-Hexane | 80 U | | 80 | | µg/m3 | | NC |
| GS | BVSVP-1 | BVSVP1SVS002 | N | 11 Sep 2014 | 3.5 - 5.5 | TO15 | OTHER | Nonane | 80 U | | 80 | | µg/m3 | | NC |
| GS | BVSVP-1 | BVSVP1SVS002 | N | 11 Sep 2014 | 3.5 - 5.5 | TO15 | OTHER | Undecane | 80 U | | 80 | | µg/m3 | | NC |
| GS | BVSVP-1 | BVSVP1SVS002 | N | 11 Sep 2014 | 3.5 - 5.5 | TO15 | VOC | 1,1,1,2-Tetrachloroethane | 4 U | 1.8 | 4 | | µg/m3 | | N |
| GS | BVSVP-1 | BVSVP1SVS002 | N | 11 Sep 2014 | 3.5 - 5.5 | TO15 | VOC | 1,1,1-Trichloroethane | 22 = | 1.4 | 4 | | µg/m3 | | N |
| GS | BVSVP-1 | BVSVP1SVS002 | N | 11 Sep 2014 | 3.5 - 5.5 | TO15 | VOC | 1,1,2,2-Tetrachloroethane | 4 U | 1.2 | 4 | | µg/m3 | | N |
| GS | BVSVP-1 | BVSVP1SVS002 | N | 11 Sep 2014 | 3.5 - 5.5 | TO15 | VOC | 1,1,2-Trichloro-1,2,2-trifluoroethane | 8.1 = | 1.4 | 4 | | µg/m3 | | N |
| GS | BVSVP-1 | BVSVP1SVS002 | N | 11 Sep 2014 | 3.5 - 5.5 | TO15 | VOC | 1,1,2-Trichloroethane | 4 U | 1.3 | 4 | | µg/m3 | | N |
| GS | BVSVP-1 | BVSVP1SVS002 | N | 11 Sep 2014 | 3.5 - 5.5 | TO15 | VOC | 1,1-Dichloroethane | 4 U | 1.3 | 4 | | µg/m3 | | N |
| GS | BVSVP-1 | BVSVP1SVS002 | N | 11 Sep 2014 | 3.5 - 5.5 | TO15 | VOC | 1,1-Dichloroethene | 4 U | 1.4 | 4 | | µg/m3 | | N |
| GS | BVSVP-1 | BVSVP1SVS002 | N | 11 Sep 2014 | 3.5 - 5.5 | TO15 | VOC | 1,2-Dichloroethane | 4 U | 1.3 | 4 | | µg/m3 | | N |
| GS | BVSVP-1 | BVSVP1SVS002 | N | 11 Sep 2014 | 3.5 - 5.5 | TO15 | VOC | Benzene | 4 U | 1.3 | 4 | | µg/m3 | | N |
| GS | BVSVP-1 | BVSVP1SVS002 | N | 11 Sep 2014 | 3.5 - 5.5 | TO15 | VOC | Carbon tetrachloride | 4 U | 1.2 | 4 | | µg/m3 | | N |
| GS | BVSVP-1 | BVSVP1SVS002 | N | 11 Sep 2014 | 3.5 - 5.5 | TO15 | VOC | Chloroethane | 4 U | 1.4 | 4 | | µg/m3 | | N |
| GS | BVSVP-1 | BVSVP1SVS002 | N | 11 Sep 2014 | 3.5 - 5.5 | TO15 | VOC | cis-1,2-Dichloroethene | 4 U | 1.3 | 4 | | µg/m3 | | N |
| GS | BVSVP-1 | BVSVP1SVS002 | N | 11 Sep 2014 | 3.5 - 5.5 | TO15 | VOC | Dichlorodifluoromethane | 4 U | 1.4 | 4 | | µg/m3 | | N |
| GS | BVSVP-1 | BVSVP1SVS002 | N | 11 Sep 2014 | 3.5 - 5.5 | TO15 | VOC | Ethylbenzene | 4 U | 1.3 | 4 | | µg/m3 | | N |
| GS | BVSVP-1 | BVSVP1SVS002 | N | 11 Sep 2014 | 3.5 - 5.5 | TO15 | VOC | m,p-Xylenes | 8 U | 2.4 | 8 | | µg/m3 | | N |
| GS | BVSVP-1 | BVSVP1SVS002 | N | 11 Sep 2014 | 3.5 - 5.5 | TO15 | VOC | Methylene chloride | 4 U | 1.4 | 4 | | µg/m3 | | N |
| GS | BVSVP-1 | BVSVP1SVS002 | N | 11 Sep 2014 | 3.5 - 5.5 | TO15 | VOC | n-Octane | 80 U | | 80 | | µg/m3 | | NC |
| GS | BVSVP-1 | BVSVP1SVS002 | N | 11 Sep 2014 | 3.5 - 5.5 | TO15 | VOC | o-Xylene | 4 U | 1.2 | 4 | | µg/m3 | | N |
| GS | BVSVP-1 | BVSVP1SVS002 | N | 11 Sep 2014 | 3.5 - 5.5 | TO15 | VOC | Propane | 80 U | | 80 | | µg/m3 | | NC |
| GS | BVSVP-1 | BVSVP1SVS002 | N | 11 Sep 2014 | 3.5 - 5.5 | TO15 | VOC | Tetrachloroethene | 4 U | 1.1 | 4 | | µg/m3 | | N |
| GS | BVSVP-1 | BVSVP1SVS002 | N | 11 Sep 2014 | 3.5 - 5.5 | TO15 | VOC | Toluene | 4 U | 1.4 | 4 | | µg/m3 | | N |
| GS | BVSVP-1 | BVSVP1SVS002 | N | 11 Sep 2014 | 3.5 - 5.5 | TO15 | VOC | trans-1,2-Dichloroethene | 4 U | 1.5 | 4 | | µg/m3 | | N |
| GS | BVSVP-1 | BVSVP1SVS002 | N | 11 Sep 2014 | 3.5 - 5.5 | TO15 | VOC | Trichloroethene | 1900 = | 11 | 40 | | µg/m3 | | Y |
| GS | BVSVP-1 | BVSVP1SVS002 | N | 11 Sep 2014 | 3.5 - 5.5 | TO15 | VOC | Trichlorofluoromethane | 4 U | 1.4 | 4 | | µg/m3 | | N |
| GS | BVSVP-1 | BVSVP1SVS002 | N | 11 Sep 2014 | 3.5 - 5.5 | TO15 | VOC | Trichloromethane (Chloroform) | 4 U | 1.4 | 4 | | µg/m3 | | N |
| GS | BVSVP-1 | BVSVP1SVS002 | N | 11 Sep 2014 | 3.5 - 5.5 | TO15 | VOC | Vinyl chloride | 4 U | 1.4 | 4 | | µg/m3 | | N |
| GS | BVSVP-2 | BVSVP2SVS001 | N | 18 Aug 2014 | 3.5 - 5.5 | TO15 | OTHER | C4 as n-Butane | 5400 UJ | | 5400 | | µg/m3 | | NC |
| GS | BVSVP-2 | BVSVP2SVS001 | N | 18 Aug 2014 | 3.5 - 5.5 | TO15 | OTHER | C5 as n-Pentane | 5400 UJ | | 5400 | | µg/m3 | | NC |
| GS | BVSVP-2 | BVSVP2SVS001 | N | 18 Aug 2014 | 3.5 - 5.5 | TO15 | OTHER | C7 as n-Heptane | 5400 UJ | | 5400 | | µg/m3 | | NC |
| GS | BVSVP-2 | BVSVP2SVS001 | N | 18 Aug 2014 | 3.5 - 5.5 | TO15 | OTHER | Dodecane | 5400 UJ | | 5400 | | µg/m3 | | NC |
| GS | BVSVP-2 | BVSVP2SVS001 | N | 18 Aug 2014 | 3.5 - 5.5 | TO15 | OTHER | n-Decane | 5400 UJ | | 5400 | | µg/m3 | | NC |
| GS | BVSVP-2 | BVSVP2SVS001 | N | 18 Aug 2014 | 3.5 - 5.5 | TO15 | OTHER | n-Hexane | 5400 UJ | | 5400 | | µg/m3 | | NC |
| GS | BVSVP-2 | BVSVP2SVS001 | N | 18 Aug 2014 | 3.5 - 5.5 | TO15 | OTHER | Nonane | 5400 UJ | | 5400 | | µg/m3 | | NC |
| GS | BVSVP-2 | BVSVP2SVS001 | N | 18 Aug 2014 | 3.5 - 5.5 | TO15 | OTHER | Undecane | 5400 UJ | | 5400 | | µg/m3 | | NC |

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**Test Stand Biovent Analytical Data**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | FSP SL | Units | FSP Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| GS | BVSVP-2 | BVSVP2SVS001 | N | 18 Aug 2014 | 3.5 - 5.5 | TO15 | VOC | 1,1,1,2-Tetrachloroethane | 270 U | | | | µg/m3 | | RL |
| GS | BVSVP-2 | BVSVP2SVS001 | N | 18 Aug 2014 | 3.5 - 5.5 | TO15 | VOC | 1,1,1-Trichloroethane | 1200 = | 92 | 270 | | µg/m3 | | Y |
| GS | BVSVP-2 | BVSVP2SVS001 | N | 18 Aug 2014 | 3.5 - 5.5 | TO15 | VOC | 1,1,2,2-Tetrachloroethane | 270 U | 82 | 270 | | µg/m3 | | N |
| GS | BVSVP-2 | BVSVP2SVS001 | N | 18 Aug 2014 | 3.5 - 5.5 | TO15 | VOC | 1,1,2-Trichloro-1,2,2-trifluoroethane | 960 = | 92 | 270 | | µg/m3 | | Y |
| GS | BVSVP-2 | BVSVP2SVS001 | N | 18 Aug 2014 | 3.5 - 5.5 | TO15 | VOC | 1,1,2-Trichloroethane | 270 U | 87 | 270 | | µg/m3 | | N |
| GS | BVSVP-2 | BVSVP2SVS001 | N | 18 Aug 2014 | 3.5 - 5.5 | TO15 | VOC | 1,1-Dichloroethane | 270 U | 87 | 270 | | µg/m3 | | N |
| GS | BVSVP-2 | BVSVP2SVS001 | N | 18 Aug 2014 | 3.5 - 5.5 | TO15 | VOC | 1,1-Dichloroethene | 270 U | 92 | 270 | | µg/m3 | | N |
| GS | BVSVP-2 | BVSVP2SVS001 | N | 18 Aug 2014 | 3.5 - 5.5 | TO15 | VOC | 1,2-Dichloroethane | 270 U | 87 | 270 | | µg/m3 | | N |
| GS | BVSVP-2 | BVSVP2SVS001 | N | 18 Aug 2014 | 3.5 - 5.5 | TO15 | VOC | Benzene | 270 U | 87 | 270 | | µg/m3 | | RL |
| GS | BVSVP-2 | BVSVP2SVS001 | N | 18 Aug 2014 | 3.5 - 5.5 | TO15 | VOC | Carbon tetrachloride | 270 U | 82 | 270 | | µg/m3 | | RL |
| GS | BVSVP-2 | BVSVP2SVS001 | N | 18 Aug 2014 | 3.5 - 5.5 | TO15 | VOC | Chloroethane | 270 U | 92 | 270 | | µg/m3 | | N |
| GS | BVSVP-2 | BVSVP2SVS001 | N | 18 Aug 2014 | 3.5 - 5.5 | TO15 | VOC | cis-1,2-Dichloroethene | 270 U | 87 | 270 | | µg/m3 | | N |
| GS | BVSVP-2 | BVSVP2SVS001 | N | 18 Aug 2014 | 3.5 - 5.5 | TO15 | VOC | Dichlorodifluoromethane | 270 U | 92 | 270 | | µg/m3 | | N |
| GS | BVSVP-2 | BVSVP2SVS001 | N | 18 Aug 2014 | 3.5 - 5.5 | TO15 | VOC | Ethylbenzene | 270 U | 87 | 270 | | µg/m3 | | N |
| GS | BVSVP-2 | BVSVP2SVS001 | N | 18 Aug 2014 | 3.5 - 5.5 | TO15 | VOC | m,p-Xylenes | 540 U | 160 | 540 | | µg/m3 | | N |
| GS | BVSVP-2 | BVSVP2SVS001 | N | 18 Aug 2014 | 3.5 - 5.5 | TO15 | VOC | Methylene chloride | 270 U | 92 | 270 | | µg/m3 | | N |
| GS | BVSVP-2 | BVSVP2SVS001 | N | 18 Aug 2014 | 3.5 - 5.5 | TO15 | VOC | n-Octane | 5400 UJ | | 5400 | | µg/m3 | | NC |
| GS | BVSVP-2 | BVSVP2SVS001 | N | 18 Aug 2014 | 3.5 - 5.5 | TO15 | VOC | o-Xylene | 270 U | 82 | 270 | | µg/m3 | | RL |
| GS | BVSVP-2 | BVSVP2SVS001 | N | 18 Aug 2014 | 3.5 - 5.5 | TO15 | VOC | Propane | 5400 UJ | | 5400 | | µg/m3 | | NC |
| GS | BVSVP-2 | BVSVP2SVS001 | N | 18 Aug 2014 | 3.5 - 5.5 | TO15 | VOC | Tetrachloroethene | 270 U | 76 | 270 | | µg/m3 | | N |
| GS | BVSVP-2 | BVSVP2SVS001 | N | 18 Aug 2014 | 3.5 - 5.5 | TO15 | VOC | Toluene | 270 U | 92 | 270 | | µg/m3 | | N |
| GS | BVSVP-2 | BVSVP2SVS001 | N | 18 Aug 2014 | 3.5 - 5.5 | TO15 | VOC | trans-1,2-Dichloroethene | 270 U | 100 | 270 | | µg/m3 | | N |
| GS | BVSVP-2 | BVSVP2SVS001 | N | 18 Aug 2014 | 3.5 - 5.5 | TO15 | VOC | Trichloroethene | 55000 = | 76 | 270 | | µg/m3 | | Y |
| GS | BVSVP-2 | BVSVP2SVS001 | N | 18 Aug 2014 | 3.5 - 5.5 | TO15 | VOC | Trichlorofluoromethane | 270 U | 92 | 270 | | µg/m3 | | N |
| GS | BVSVP-2 | BVSVP2SVS001 | N | 18 Aug 2014 | 3.5 - 5.5 | TO15 | VOC | Trichloromethane (Chloroform) | 270 U | 92 | 270 | | µg/m3 | | N |
| GS | BVSVP-2 | BVSVP2SVS001 | N | 18 Aug 2014 | 3.5 - 5.5 | TO15 | VOC | Vinyl chloride | 270 U | 92 | 270 | | µg/m3 | | RL |
| GS | BVSVP-2 | BVSVP2SVS002 | N | 11 Sep 2014 | 3.5 - 5.5 | TO15 | OTHER | C4 as n-Butane | 320 U | | 320 | | µg/m3 | | NC |
| GS | BVSVP-2 | BVSVP2SVS002 | N | 11 Sep 2014 | 3.5 - 5.5 | TO15 | OTHER | C5 as n-Pentane | 320 U | | 320 | | µg/m3 | | NC |
| GS | BVSVP-2 | BVSVP2SVS002 | N | 11 Sep 2014 | 3.5 - 5.5 | TO15 | OTHER | C7 as n-Heptane | 320 U | | 320 | | µg/m3 | | NC |
| GS | BVSVP-2 | BVSVP2SVS002 | N | 11 Sep 2014 | 3.5 - 5.5 | TO15 | OTHER | Dodecane | 320 U | | 320 | | µg/m3 | | NC |
| GS | BVSVP-2 | BVSVP2SVS002 | N | 11 Sep 2014 | 3.5 - 5.5 | TO15 | OTHER | n-Decane | 320 U | | 320 | | µg/m3 | | NC |
| GS | BVSVP-2 | BVSVP2SVS002 | N | 11 Sep 2014 | 3.5 - 5.5 | TO15 | OTHER | n-Hexane | 320 U | | 320 | | µg/m3 | | NC |
| GS | BVSVP-2 | BVSVP2SVS002 | N | 11 Sep 2014 | 3.5 - 5.5 | TO15 | OTHER | Nonane | 320 U | | 320 | | µg/m3 | | NC |
| GS | BVSVP-2 | BVSVP2SVS002 | N | 11 Sep 2014 | 3.5 - 5.5 | TO15 | OTHER | Undecane | 320 U | | 320 | | µg/m3 | | NC |
| GS | BVSVP-2 | BVSVP2SVS002 | N | 11 Sep 2014 | 3.5 - 5.5 | TO15 | VOC | 1,1,1,2-Tetrachloroethane | 16 U | 7.3 | 16 | | µg/m3 | | N |
| GS | BVSVP-2 | BVSVP2SVS002 | N | 11 Sep 2014 | 3.5 - 5.5 | TO15 | VOC | 1,1,1-Trichloroethane | 24 = | 5.4 | 16 | | µg/m3 | | N |
| GS | BVSVP-2 | BVSVP2SVS002 | N | 11 Sep 2014 | 3.5 - 5.5 | TO15 | VOC | 1,1,2,2-Tetrachloroethane | 16 U | 4.8 | 16 | | µg/m3 | | N |
| GS | BVSVP-2 | BVSVP2SVS002 | N | 11 Sep 2014 | 3.5 - 5.5 | TO15 | VOC | 1,1,2-Trichloro-1,2,2-trifluoroethane | 16 U | 5.4 | 16 | | µg/m3 | | N |

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**Test Stand Biovent Analytical Data**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | FSP SL | Units | FSP Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| GS | BVSVP-2 | BVSVP2SVS002 | N | 11 Sep 2014 | 3.5 - 5.5 | TO15 | VOC | 1,1,2-Trichloroethane | 16 U | 5.1 | 16 | | µg/m3 | | N |
| GS | BVSVP-2 | BVSVP2SVS002 | N | 11 Sep 2014 | 3.5 - 5.5 | TO15 | VOC | 1,1-Dichloroethane | 16 U | 5.1 | 16 | | µg/m3 | | N |
| GS | BVSVP-2 | BVSVP2SVS002 | N | 11 Sep 2014 | 3.5 - 5.5 | TO15 | VOC | 1,1-Dichloroethene | 16 U | 5.4 | 16 | | µg/m3 | | N |
| GS | BVSVP-2 | BVSVP2SVS002 | N | 11 Sep 2014 | 3.5 - 5.5 | TO15 | VOC | 1,2-Dichloroethane | 16 U | 5.1 | 16 | | µg/m3 | | N |
| GS | BVSVP-2 | BVSVP2SVS002 | N | 11 Sep 2014 | 3.5 - 5.5 | TO15 | VOC | Benzene | 16 U | 5.1 | 16 | | µg/m3 | | N |
| GS | BVSVP-2 | BVSVP2SVS002 | N | 11 Sep 2014 | 3.5 - 5.5 | TO15 | VOC | Carbon tetrachloride | 16 U | 4.8 | 16 | | µg/m3 | | N |
| GS | BVSVP-2 | BVSVP2SVS002 | N | 11 Sep 2014 | 3.5 - 5.5 | TO15 | VOC | Chloroethane | 16 U | 5.4 | 16 | | µg/m3 | | N |
| GS | BVSVP-2 | BVSVP2SVS002 | N | 11 Sep 2014 | 3.5 - 5.5 | TO15 | VOC | cis-1,2-Dichloroethene | 16 U | 5.1 | 16 | | µg/m3 | | N |
| GS | BVSVP-2 | BVSVP2SVS002 | N | 11 Sep 2014 | 3.5 - 5.5 | TO15 | VOC | Dichlorodifluoromethane | 16 U | 5.4 | 16 | | µg/m3 | | N |
| GS | BVSVP-2 | BVSVP2SVS002 | N | 11 Sep 2014 | 3.5 - 5.5 | TO15 | VOC | Ethylbenzene | 16 U | 5.1 | 16 | | µg/m3 | | N |
| GS | BVSVP-2 | BVSVP2SVS002 | N | 11 Sep 2014 | 3.5 - 5.5 | TO15 | VOC | m,p-Xylenes | 32 U | 9.5 | 32 | | µg/m3 | | N |
| GS | BVSVP-2 | BVSVP2SVS002 | N | 11 Sep 2014 | 3.5 - 5.5 | TO15 | VOC | Methylene chloride | 16 U | 5.4 | 16 | | µg/m3 | | N |
| GS | BVSVP-2 | BVSVP2SVS002 | N | 11 Sep 2014 | 3.5 - 5.5 | TO15 | VOC | n-Octane | 320 U | | 320 | | µg/m3 | | NC |
| GS | BVSVP-2 | BVSVP2SVS002 | N | 11 Sep 2014 | 3.5 - 5.5 | TO15 | VOC | o-Xylene | 16 U | 4.8 | 16 | | µg/m3 | | N |
| GS | BVSVP-2 | BVSVP2SVS002 | N | 11 Sep 2014 | 3.5 - 5.5 | TO15 | VOC | Propane | 320 U | | 320 | | µg/m3 | | NC |
| GS | BVSVP-2 | BVSVP2SVS002 | N | 11 Sep 2014 | 3.5 - 5.5 | TO15 | VOC | Tetrachloroethene | 16 U | 4.5 | 16 | | µg/m3 | | N |
| GS | BVSVP-2 | BVSVP2SVS002 | N | 11 Sep 2014 | 3.5 - 5.5 | TO15 | VOC | Toluene | 16 U | 5.4 | 16 | | µg/m3 | | N |
| GS | BVSVP-2 | BVSVP2SVS002 | N | 11 Sep 2014 | 3.5 - 5.5 | TO15 | VOC | trans-1,2-Dichloroethene | 16 U | 6 | 16 | | µg/m3 | | N |
| GS | BVSVP-2 | BVSVP2SVS002 | N | 11 Sep 2014 | 3.5 - 5.5 | TO15 | VOC | Trichloroethene | 3200 = | 4.5 | 16 | | µg/m3 | | Y |
| GS | BVSVP-2 | BVSVP2SVS002 | N | 11 Sep 2014 | 3.5 - 5.5 | TO15 | VOC | Trichlorofluoromethane | 16 U | 5.4 | 16 | | µg/m3 | | N |
| GS | BVSVP-2 | BVSVP2SVS002 | N | 11 Sep 2014 | 3.5 - 5.5 | TO15 | VOC | Trichloromethane (Chloroform) | 16 U | 5.4 | 16 | | µg/m3 | | N |
| GS | BVSVP-2 | BVSVP2SVS002 | N | 11 Sep 2014 | 3.5 - 5.5 | TO15 | VOC | Vinyl chloride | 16 U | 5.4 | 16 | | µg/m3 | | N |
| GS | BVSVP-3 | BVSVP3SVS001 | N | 18 Aug 2014 | 3.25 - 5.25 | TO15 | OTHER | C4 as n-Butane | 21000 UJ | | 21000 | | µg/m3 | | NC |
| GS | BVSVP-3 | BVSVP3SVS001 | N | 18 Aug 2014 | 3.25 - 5.25 | TO15 | OTHER | C5 as n-Pentane | 21000 UJ | | 21000 | | µg/m3 | | NC |
| GS | BVSVP-3 | BVSVP3SVS001 | N | 18 Aug 2014 | 3.25 - 5.25 | TO15 | OTHER | C7 as n-Heptane | 21000 UJ | | 21000 | | µg/m3 | | NC |
| GS | BVSVP-3 | BVSVP3SVS001 | N | 18 Aug 2014 | 3.25 - 5.25 | TO15 | OTHER | Dodecane | 21000 UJ | | 21000 | | µg/m3 | | NC |
| GS | BVSVP-3 | BVSVP3SVS001 | N | 18 Aug 2014 | 3.25 - 5.25 | TO15 | OTHER | n-Decane | 21000 UJ | | 21000 | | µg/m3 | | NC |
| GS | BVSVP-3 | BVSVP3SVS001 | N | 18 Aug 2014 | 3.25 - 5.25 | TO15 | OTHER | n-Hexane | 21000 UJ | | 21000 | | µg/m3 | | NC |
| GS | BVSVP-3 | BVSVP3SVS001 | N | 18 Aug 2014 | 3.25 - 5.25 | TO15 | OTHER | Nonane | 21000 UJ | | 21000 | | µg/m3 | | NC |
| GS | BVSVP-3 | BVSVP3SVS001 | N | 18 Aug 2014 | 3.25 - 5.25 | TO15 | OTHER | Undecane | 21000 UJ | | 21000 | | µg/m3 | | NC |
| GS | BVSVP-3 | BVSVP3SVS001 | N | 18 Aug 2014 | 3.25 - 5.25 | TO15 | VOC | 1,1,1,2-Tetrachloroethane | 1100 U | | | | µg/m3 | | RL |
| GS | BVSVP-3 | BVSVP3SVS001 | N | 18 Aug 2014 | 3.25 - 5.25 | TO15 | VOC | 1,1,1-Trichloroethane | 2200 = | 360 | 1100 | | µg/m3 | | Y |
| GS | BVSVP-3 | BVSVP3SVS001 | N | 18 Aug 2014 | 3.25 - 5.25 | TO15 | VOC | 1,1,2,2-Tetrachloroethane | 1100 U | 320 | 1100 | | µg/m3 | | RL |
| GS | BVSVP-3 | BVSVP3SVS001 | N | 18 Aug 2014 | 3.25 - 5.25 | TO15 | VOC | 1,1,2-Trichloro-1,2,2-trifluoroethane | 1400 = | 360 | 1100 | | µg/m3 | | Y |
| GS | BVSVP-3 | BVSVP3SVS001 | N | 18 Aug 2014 | 3.25 - 5.25 | TO15 | VOC | 1,1,2-Trichloroethane | 1100 U | 340 | 1100 | | µg/m3 | | RL |
| GS | BVSVP-3 | BVSVP3SVS001 | N | 18 Aug 2014 | 3.25 - 5.25 | TO15 | VOC | 1,1-Dichloroethane | 1100 U | 340 | 1100 | | µg/m3 | | RL |
| GS | BVSVP-3 | BVSVP3SVS001 | N | 18 Aug 2014 | 3.25 - 5.25 | TO15 | VOC | 1,1-Dichloroethene | 1100 U | 360 | 1100 | | µg/m3 | | RL |
| GS | BVSVP-3 | BVSVP3SVS001 | N | 18 Aug 2014 | 3.25 - 5.25 | TO15 | VOC | 1,2-Dichloroethane | 1100 U | 340 | 1100 | | µg/m3 | | RL |

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**Test Stand Biovent Analytical Data**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | FSP SL | Units | FSP Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| GS | BVSVP-3 | BVSVP3SVS001 | N | 18 Aug 2014 | 3.25 - 5.25 | TO15 | VOC | Benzene | 1100 U | 340 | 1100 | | µg/m3 | | RL |
| GS | BVSVP-3 | BVSVP3SVS001 | N | 18 Aug 2014 | 3.25 - 5.25 | TO15 | VOC | Carbon tetrachloride | 1100 U | 320 | 1100 | | µg/m3 | | RL |
| GS | BVSVP-3 | BVSVP3SVS001 | N | 18 Aug 2014 | 3.25 - 5.25 | TO15 | VOC | Chloroethane | 1100 U | 360 | 1100 | | µg/m3 | | RL |
| GS | BVSVP-3 | BVSVP3SVS001 | N | 18 Aug 2014 | 3.25 - 5.25 | TO15 | VOC | cis-1,2-Dichloroethene | 1100 U | 340 | 1100 | | µg/m3 | | RL |
| GS | BVSVP-3 | BVSVP3SVS001 | N | 18 Aug 2014 | 3.25 - 5.25 | TO15 | VOC | Dichlorodifluoromethane | 1100 U | 360 | 1100 | | µg/m3 | | RL |
| GS | BVSVP-3 | BVSVP3SVS001 | N | 18 Aug 2014 | 3.25 - 5.25 | TO15 | VOC | Ethylbenzene | 1100 U | 340 | 1100 | | µg/m3 | | RL |
| GS | BVSVP-3 | BVSVP3SVS001 | N | 18 Aug 2014 | 3.25 - 5.25 | TO15 | VOC | m,p-Xylenes | 2100 U | 640 | 2100 | | µg/m3 | | RL |
| GS | BVSVP-3 | BVSVP3SVS001 | N | 18 Aug 2014 | 3.25 - 5.25 | TO15 | VOC | Methylene chloride | 1100 U | 360 | 1100 | | µg/m3 | | N |
| GS | BVSVP-3 | BVSVP3SVS001 | N | 18 Aug 2014 | 3.25 - 5.25 | TO15 | VOC | n-Octane | 21000 UJ | | 21000 | | µg/m3 | | NC |
| GS | BVSVP-3 | BVSVP3SVS001 | N | 18 Aug 2014 | 3.25 - 5.25 | TO15 | VOC | o-Xylene | 1100 U | 320 | 1100 | | µg/m3 | | RL |
| GS | BVSVP-3 | BVSVP3SVS001 | N | 18 Aug 2014 | 3.25 - 5.25 | TO15 | VOC | Propane | 21000 UJ | | 21000 | | µg/m3 | | NC |
| GS | BVSVP-3 | BVSVP3SVS001 | N | 18 Aug 2014 | 3.25 - 5.25 | TO15 | VOC | Tetrachloroethene | 1100 U | 300 | 1100 | | µg/m3 | | RL |
| GS | BVSVP-3 | BVSVP3SVS001 | N | 18 Aug 2014 | 3.25 - 5.25 | TO15 | VOC | Toluene | 1100 U | 360 | 1100 | | µg/m3 | | RL |
| GS | BVSVP-3 | BVSVP3SVS001 | N | 18 Aug 2014 | 3.25 - 5.25 | TO15 | VOC | trans-1,2-Dichloroethene | 1100 U | 410 | 1100 | | µg/m3 | | RL |
| GS | BVSVP-3 | BVSVP3SVS001 | N | 18 Aug 2014 | 3.25 - 5.25 | TO15 | VOC | Trichloroethene | 190000 = | 300 | 1100 | | µg/m3 | | Y |
| GS | BVSVP-3 | BVSVP3SVS001 | N | 18 Aug 2014 | 3.25 - 5.25 | TO15 | VOC | Trichlorofluoromethane | 1100 U | 360 | 1100 | | µg/m3 | | RL |
| GS | BVSVP-3 | BVSVP3SVS001 | N | 18 Aug 2014 | 3.25 - 5.25 | TO15 | VOC | Trichloromethane (Chloroform) | 1100 U | 360 | 1100 | | µg/m3 | | RL |
| GS | BVSVP-3 | BVSVP3SVS001 | N | 18 Aug 2014 | 3.25 - 5.25 | TO15 | VOC | Vinyl chloride | 1100 U | 360 | 1100 | | µg/m3 | | RL |
| GS | BVSVP-3 | BVSVP3SVS002 | N | 11 Sep 2014 | 3.25 - 5.25 | TO15 | OTHER | C4 as n-Butane | 20000 U | | 20000 | | µg/m3 | | NC |
| GS | BVSVP-3 | BVSVP3SVS002 | N | 11 Sep 2014 | 3.25 - 5.25 | TO15 | OTHER | C5 as n-Pentane | 20000 U | | 20000 | | µg/m3 | | NC |
| GS | BVSVP-3 | BVSVP3SVS002 | N | 11 Sep 2014 | 3.25 - 5.25 | TO15 | OTHER | C7 as n-Heptane | 20000 U | | 20000 | | µg/m3 | | NC |
| GS | BVSVP-3 | BVSVP3SVS002 | N | 11 Sep 2014 | 3.25 - 5.25 | TO15 | OTHER | Dodecane | 20000 U | | 20000 | | µg/m3 | | NC |
| GS | BVSVP-3 | BVSVP3SVS002 | N | 11 Sep 2014 | 3.25 - 5.25 | TO15 | OTHER | n-Decane | 20000 U | | 20000 | | µg/m3 | | NC |
| GS | BVSVP-3 | BVSVP3SVS002 | N | 11 Sep 2014 | 3.25 - 5.25 | TO15 | OTHER | n-Hexane | 20000 U | | 20000 | | µg/m3 | | NC |
| GS | BVSVP-3 | BVSVP3SVS002 | N | 11 Sep 2014 | 3.25 - 5.25 | TO15 | OTHER | Nonane | 20000 U | | 20000 | | µg/m3 | | NC |
| GS | BVSVP-3 | BVSVP3SVS002 | N | 11 Sep 2014 | 3.25 - 5.25 | TO15 | OTHER | Undecane | 20000 U | | 20000 | | µg/m3 | | NC |
| GS | BVSVP-3 | BVSVP3SVS002 | N | 11 Sep 2014 | 3.25 - 5.25 | TO15 | VOC | 1,1,1,2-Tetrachloroethane | 1000 U | 460 | 1000 | | µg/m3 | | RL |
| GS | BVSVP-3 | BVSVP3SVS002 | N | 11 Sep 2014 | 3.25 - 5.25 | TO15 | VOC | 1,1,1-Trichloroethane | 1000 U | 340 | 1000 | | µg/m3 | | RL |
| GS | BVSVP-3 | BVSVP3SVS002 | N | 11 Sep 2014 | 3.25 - 5.25 | TO15 | VOC | 1,1,2,2-Tetrachloroethane | 1000 U | 300 | 1000 | | µg/m3 | | RL |
| GS | BVSVP-3 | BVSVP3SVS002 | N | 11 Sep 2014 | 3.25 - 5.25 | TO15 | VOC | 1,1,2-Trichloro-1,2,2-trifluoroethane | 1000 U | 340 | 1000 | | µg/m3 | | RL |
| GS | BVSVP-3 | BVSVP3SVS002 | N | 11 Sep 2014 | 3.25 - 5.25 | TO15 | VOC | 1,1,2-Trichloroethane | 1000 U | 320 | 1000 | | µg/m3 | | RL |
| GS | BVSVP-3 | BVSVP3SVS002 | N | 11 Sep 2014 | 3.25 - 5.25 | TO15 | VOC | 1,1-Dichloroethane | 1000 U | 320 | 1000 | | µg/m3 | | RL |
| GS | BVSVP-3 | BVSVP3SVS002 | N | 11 Sep 2014 | 3.25 - 5.25 | TO15 | VOC | 1,1-Dichloroethene | 1000 U | 340 | 1000 | | µg/m3 | | RL |
| GS | BVSVP-3 | BVSVP3SVS002 | N | 11 Sep 2014 | 3.25 - 5.25 | TO15 | VOC | 1,2-Dichloroethane | 1000 U | 320 | 1000 | | µg/m3 | | RL |
| GS | BVSVP-3 | BVSVP3SVS002 | N | 11 Sep 2014 | 3.25 - 5.25 | TO15 | VOC | Benzene | 1000 U | 320 | 1000 | | µg/m3 | | RL |
| GS | BVSVP-3 | BVSVP3SVS002 | N | 11 Sep 2014 | 3.25 - 5.25 | TO15 | VOC | Carbon tetrachloride | 1000 U | 300 | 1000 | | µg/m3 | | RL |
| GS | BVSVP-3 | BVSVP3SVS002 | N | 11 Sep 2014 | 3.25 - 5.25 | TO15 | VOC | Chloroethane | 1000 U | 340 | 1000 | | µg/m3 | | RL |
| GS | BVSVP-3 | BVSVP3SVS002 | N | 11 Sep 2014 | 3.25 - 5.25 | TO15 | VOC | cis-1,2-Dichloroethene | 1000 U | 320 | 1000 | | µg/m3 | | RL |

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**Test Stand Biovent Analytical Data**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | FSP SL | Units | FSP Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| GS | BVSVP-3 | BVSVP3SVS002 | N | 11 Sep 2014 | 3.25 - 5.25 | TO15 | VOC | Dichlorodifluoromethane | 1000 U | 340 | 1000 | | µg/m3 | | RL |
| GS | BVSVP-3 | BVSVP3SVS002 | N | 11 Sep 2014 | 3.25 - 5.25 | TO15 | VOC | Ethylbenzene | 1000 U | 320 | 1000 | | µg/m3 | | RL |
| GS | BVSVP-3 | BVSVP3SVS002 | N | 11 Sep 2014 | 3.25 - 5.25 | TO15 | VOC | m,p-Xylenes | 2000 U | 600 | 2000 | | µg/m3 | | RL |
| GS | BVSVP-3 | BVSVP3SVS002 | N | 11 Sep 2014 | 3.25 - 5.25 | TO15 | VOC | Methylene chloride | 1000 U | 340 | 1000 | | µg/m3 | | N |
| GS | BVSVP-3 | BVSVP3SVS002 | N | 11 Sep 2014 | 3.25 - 5.25 | TO15 | VOC | n-Octane | 20000 U | | 20000 | | µg/m3 | | NC |
| GS | BVSVP-3 | BVSVP3SVS002 | N | 11 Sep 2014 | 3.25 - 5.25 | TO15 | VOC | o-Xylene | 1000 U | 300 | 1000 | | µg/m3 | | RL |
| GS | BVSVP-3 | BVSVP3SVS002 | N | 11 Sep 2014 | 3.25 - 5.25 | TO15 | VOC | Propane | 20000 U | | 20000 | | µg/m3 | | NC |
| GS | BVSVP-3 | BVSVP3SVS002 | N | 11 Sep 2014 | 3.25 - 5.25 | TO15 | VOC | Tetrachloroethene | 1000 U | 280 | 1000 | | µg/m3 | | RL |
| GS | BVSVP-3 | BVSVP3SVS002 | N | 11 Sep 2014 | 3.25 - 5.25 | TO15 | VOC | Toluene | 1000 U | 340 | 1000 | | µg/m3 | | RL |
| GS | BVSVP-3 | BVSVP3SVS002 | N | 11 Sep 2014 | 3.25 - 5.25 | TO15 | VOC | trans-1,2-Dichloroethene | 1000 U | 380 | 1000 | | µg/m3 | | RL |
| GS | BVSVP-3 | BVSVP3SVS002 | N | 11 Sep 2014 | 3.25 - 5.25 | TO15 | VOC | Trichloroethene | 150000 = | 280 | 1000 | | µg/m3 | | Y |
| GS | BVSVP-3 | BVSVP3SVS002 | N | 11 Sep 2014 | 3.25 - 5.25 | TO15 | VOC | Trichlorofluoromethane | 1000 U | 340 | 1000 | | µg/m3 | | RL |
| GS | BVSVP-3 | BVSVP3SVS002 | N | 11 Sep 2014 | 3.25 - 5.25 | TO15 | VOC | Trichloromethane (Chloroform) | 1000 U | 340 | 1000 | | µg/m3 | | RL |
| GS | BVSVP-3 | BVSVP3SVS002 | N | 11 Sep 2014 | 3.25 - 5.25 | TO15 | VOC | Vinyl chloride | 1000 U | 340 | 1000 | | µg/m3 | | RL |
| GS | BVSVP-4 | BVSVP4SVS001 | N | 18 Aug 2014 | 3.5 - 6 | TO15 | OTHER | C4 as n-Butane | 8200 UJ | | 8200 | | µg/m3 | | NC |
| GS | BVSVP-4 | BVSVP4SVS001 | N | 18 Aug 2014 | 3.5 - 6 | TO15 | OTHER | C5 as n-Pentane | 8200 UJ | | 8200 | | µg/m3 | | NC |
| GS | BVSVP-4 | BVSVP4SVS001 | N | 18 Aug 2014 | 3.5 - 6 | TO15 | OTHER | C7 as n-Heptane | 8200 UJ | | 8200 | | µg/m3 | | NC |
| GS | BVSVP-4 | BVSVP4SVS001 | N | 18 Aug 2014 | 3.5 - 6 | TO15 | OTHER | Dodecane | 8200 UJ | | 8200 | | µg/m3 | | NC |
| GS | BVSVP-4 | BVSVP4SVS001 | N | 18 Aug 2014 | 3.5 - 6 | TO15 | OTHER | n-Decane | 8200 UJ | | 8200 | | µg/m3 | | NC |
| GS | BVSVP-4 | BVSVP4SVS001 | N | 18 Aug 2014 | 3.5 - 6 | TO15 | OTHER | n-Hexane | 8200 UJ | | 8200 | | µg/m3 | | NC |
| GS | BVSVP-4 | BVSVP4SVS001 | N | 18 Aug 2014 | 3.5 - 6 | TO15 | OTHER | Nonane | 8200 UJ | | 8200 | | µg/m3 | | NC |
| GS | BVSVP-4 | BVSVP4SVS001 | N | 18 Aug 2014 | 3.5 - 6 | TO15 | OTHER | Undecane | 8200 UJ | | 8200 | | µg/m3 | | NC |
| GS | BVSVP-4 | BVSVP4SVS001 | N | 18 Aug 2014 | 3.5 - 6 | TO15 | VOC | 1,1,1,2-Tetrachloroethane | 410 U | | | | µg/m3 | | RL |
| GS | BVSVP-4 | BVSVP4SVS001 | N | 18 Aug 2014 | 3.5 - 6 | TO15 | VOC | 1,1,1-Trichloroethane | 1800 = | 140 | 410 | | µg/m3 | | Y |
| GS | BVSVP-4 | BVSVP4SVS001 | N | 18 Aug 2014 | 3.5 - 6 | TO15 | VOC | 1,1,2,2-Tetrachloroethane | 410 U | 120 | 410 | | µg/m3 | | N |
| GS | BVSVP-4 | BVSVP4SVS001 | N | 18 Aug 2014 | 3.5 - 6 | TO15 | VOC | 1,1,2-Trichloro-1,2,2-trifluoroethane | 1200 = | 140 | 410 | | µg/m3 | | Y |
| GS | BVSVP-4 | BVSVP4SVS001 | N | 18 Aug 2014 | 3.5 - 6 | TO15 | VOC | 1,1,2-Trichloroethane | 410 U | 130 | 410 | | µg/m3 | | RL |
| GS | BVSVP-4 | BVSVP4SVS001 | N | 18 Aug 2014 | 3.5 - 6 | TO15 | VOC | 1,1-Dichloroethane | 410 U | 130 | 410 | | µg/m3 | | RL |
| GS | BVSVP-4 | BVSVP4SVS001 | N | 18 Aug 2014 | 3.5 - 6 | TO15 | VOC | 1,1-Dichloroethene | 410 U | 140 | 410 | | µg/m3 | | RL |
| GS | BVSVP-4 | BVSVP4SVS001 | N | 18 Aug 2014 | 3.5 - 6 | TO15 | VOC | 1,2-Dichloroethane | 410 U | 130 | 410 | | µg/m3 | | RL |
| GS | BVSVP-4 | BVSVP4SVS001 | N | 18 Aug 2014 | 3.5 - 6 | TO15 | VOC | Benzene | 410 U | 130 | 410 | | µg/m3 | | RL |
| GS | BVSVP-4 | BVSVP4SVS001 | N | 18 Aug 2014 | 3.5 - 6 | TO15 | VOC | Carbon tetrachloride | 410 U | 120 | 410 | | µg/m3 | | RL |
| GS | BVSVP-4 | BVSVP4SVS001 | N | 18 Aug 2014 | 3.5 - 6 | TO15 | VOC | Chloroethane | 410 U | 140 | 410 | | µg/m3 | | RL |
| GS | BVSVP-4 | BVSVP4SVS001 | N | 18 Aug 2014 | 3.5 - 6 | TO15 | VOC | cis-1,2-Dichloroethene | 410 U | 130 | 410 | | µg/m3 | | RL |
| GS | BVSVP-4 | BVSVP4SVS001 | N | 18 Aug 2014 | 3.5 - 6 | TO15 | VOC | Dichlorodifluoromethane | 410 U | 140 | 410 | | µg/m3 | | RL |
| GS | BVSVP-4 | BVSVP4SVS001 | N | 18 Aug 2014 | 3.5 - 6 | TO15 | VOC | Ethylbenzene | 410 U | 130 | 410 | | µg/m3 | | RL |
| GS | BVSVP-4 | BVSVP4SVS001 | N | 18 Aug 2014 | 3.5 - 6 | TO15 | VOC | m,p-Xylenes | 820 U | 240 | 820 | | µg/m3 | | RL |
| GS | BVSVP-4 | BVSVP4SVS001 | N | 18 Aug 2014 | 3.5 - 6 | TO15 | VOC | Methylene chloride | 410 U | 140 | 410 | | µg/m3 | | N |

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**Test Stand Biovent Analytical Data**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | FSP SL | Units | FSP Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| GS | BVSVP-4 | BVSVP4SVS001 | N | 18 Aug 2014 | 3.5 - 6 | TO15 | VOC | n-Octane | 8200 UJ | | 8200 | | µg/m3 | | NC |
| GS | BVSVP-4 | BVSVP4SVS001 | N | 18 Aug 2014 | 3.5 - 6 | TO15 | VOC | o-Xylene | 410 U | 120 | 410 | | µg/m3 | | RL |
| GS | BVSVP-4 | BVSVP4SVS001 | N | 18 Aug 2014 | 3.5 - 6 | TO15 | VOC | Propane | 8200 UJ | | 8200 | | µg/m3 | | NC |
| GS | BVSVP-4 | BVSVP4SVS001 | N | 18 Aug 2014 | 3.5 - 6 | TO15 | VOC | Tetrachloroethene | 410 U | 110 | 410 | | µg/m3 | | RL |
| GS | BVSVP-4 | BVSVP4SVS001 | N | 18 Aug 2014 | 3.5 - 6 | TO15 | VOC | Toluene | 410 U | 140 | 410 | | µg/m3 | | RL |
| GS | BVSVP-4 | BVSVP4SVS001 | N | 18 Aug 2014 | 3.5 - 6 | TO15 | VOC | trans-1,2-Dichloroethene | 410 U | 150 | 410 | | µg/m3 | | RL |
| GS | BVSVP-4 | BVSVP4SVS001 | N | 18 Aug 2014 | 3.5 - 6 | TO15 | VOC | Trichloroethene | 150000 = | 230 | 820 | | µg/m3 | | Y |
| GS | BVSVP-4 | BVSVP4SVS001 | N | 18 Aug 2014 | 3.5 - 6 | TO15 | VOC | Trichlorofluoromethane | 410 U | 140 | 410 | | µg/m3 | | RL |
| GS | BVSVP-4 | BVSVP4SVS001 | N | 18 Aug 2014 | 3.5 - 6 | TO15 | VOC | Trichloromethane (Chloroform) | 410 U | 140 | 410 | | µg/m3 | | RL |
| GS | BVSVP-4 | BVSVP4SVS001 | N | 18 Aug 2014 | 3.5 - 6 | TO15 | VOC | Vinyl chloride | 410 U | 140 | 410 | | µg/m3 | | RL |
| GS | BVSVP-4 | BVSVP4SVS002 | N | 11 Sep 2014 | 3.5 - 6 | TO15 | OTHER | C4 as n-Butane | 200 U | | 200 | | µg/m3 | | NC |
| GS | BVSVP-4 | BVSVP4SVS002 | N | 11 Sep 2014 | 3.5 - 6 | TO15 | OTHER | C5 as n-Pentane | 200 U | | 200 | | µg/m3 | | NC |
| GS | BVSVP-4 | BVSVP4SVS002 | N | 11 Sep 2014 | 3.5 - 6 | TO15 | OTHER | C7 as n-Heptane | 200 U | | 200 | | µg/m3 | | NC |
| GS | BVSVP-4 | BVSVP4SVS002 | N | 11 Sep 2014 | 3.5 - 6 | TO15 | OTHER | Dodecane | 200 U | | 200 | | µg/m3 | | NC |
| GS | BVSVP-4 | BVSVP4SVS002 | N | 11 Sep 2014 | 3.5 - 6 | TO15 | OTHER | n-Decane | 200 U | | 200 | | µg/m3 | | NC |
| GS | BVSVP-4 | BVSVP4SVS002 | N | 11 Sep 2014 | 3.5 - 6 | TO15 | OTHER | n-Hexane | 200 U | | 200 | | µg/m3 | | NC |
| GS | BVSVP-4 | BVSVP4SVS002 | N | 11 Sep 2014 | 3.5 - 6 | TO15 | OTHER | Nonane | 200 U | | 200 | | µg/m3 | | NC |
| GS | BVSVP-4 | BVSVP4SVS002 | N | 11 Sep 2014 | 3.5 - 6 | TO15 | OTHER | Undecane | 200 U | | 200 | | µg/m3 | | NC |
| GS | BVSVP-4 | BVSVP4SVS002 | N | 11 Sep 2014 | 3.5 - 6 | TO15 | VOC | 1,1,1,2-Tetrachloroethane | 10 U | 4.6 | 10 | | µg/m3 | | N |
| GS | BVSVP-4 | BVSVP4SVS002 | N | 11 Sep 2014 | 3.5 - 6 | TO15 | VOC | 1,1,1-Trichloroethane | 23 = | 3.4 | 10 | | µg/m3 | | N |
| GS | BVSVP-4 | BVSVP4SVS002 | N | 11 Sep 2014 | 3.5 - 6 | TO15 | VOC | 1,1,2,2-Tetrachloroethane | 10 U | 3 | 10 | | µg/m3 | | N |
| GS | BVSVP-4 | BVSVP4SVS002 | N | 11 Sep 2014 | 3.5 - 6 | TO15 | VOC | 1,1,2-Trichloro-1,2,2-trifluoroethane | 10 U | 3.4 | 10 | | µg/m3 | | N |
| GS | BVSVP-4 | BVSVP4SVS002 | N | 11 Sep 2014 | 3.5 - 6 | TO15 | VOC | 1,1,2-Trichloroethane | 10 U | 3.2 | 10 | | µg/m3 | | N |
| GS | BVSVP-4 | BVSVP4SVS002 | N | 11 Sep 2014 | 3.5 - 6 | TO15 | VOC | 1,1-Dichloroethane | 10 U | 3.2 | 10 | | µg/m3 | | N |
| GS | BVSVP-4 | BVSVP4SVS002 | N | 11 Sep 2014 | 3.5 - 6 | TO15 | VOC | 1,1-Dichloroethene | 10 U | 3.4 | 10 | | µg/m3 | | N |
| GS | BVSVP-4 | BVSVP4SVS002 | N | 11 Sep 2014 | 3.5 - 6 | TO15 | VOC | 1,2-Dichloroethane | 10 U | 3.2 | 10 | | µg/m3 | | N |
| GS | BVSVP-4 | BVSVP4SVS002 | N | 11 Sep 2014 | 3.5 - 6 | TO15 | VOC | Benzene | 10 U | 3.2 | 10 | | µg/m3 | | N |
| GS | BVSVP-4 | BVSVP4SVS002 | N | 11 Sep 2014 | 3.5 - 6 | TO15 | VOC | Carbon tetrachloride | 10 U | 3 | 10 | | µg/m3 | | N |
| GS | BVSVP-4 | BVSVP4SVS002 | N | 11 Sep 2014 | 3.5 - 6 | TO15 | VOC | Chloroethane | 10 U | 3.4 | 10 | | µg/m3 | | N |
| GS | BVSVP-4 | BVSVP4SVS002 | N | 11 Sep 2014 | 3.5 - 6 | TO15 | VOC | cis-1,2-Dichloroethene | 10 U | 3.2 | 10 | | µg/m3 | | N |
| GS | BVSVP-4 | BVSVP4SVS002 | N | 11 Sep 2014 | 3.5 - 6 | TO15 | VOC | Dichlorodifluoromethane | 10 U | 3.4 | 10 | | µg/m3 | | N |
| GS | BVSVP-4 | BVSVP4SVS002 | N | 11 Sep 2014 | 3.5 - 6 | TO15 | VOC | Ethylbenzene | 10 U | 3.2 | 10 | | µg/m3 | | N |
| GS | BVSVP-4 | BVSVP4SVS002 | N | 11 Sep 2014 | 3.5 - 6 | TO15 | VOC | m,p-Xylenes | 20 U | 6 | 20 | | µg/m3 | | N |
| GS | BVSVP-4 | BVSVP4SVS002 | N | 11 Sep 2014 | 3.5 - 6 | TO15 | VOC | Methylene chloride | 10 U | 3.4 | 10 | | µg/m3 | | N |
| GS | BVSVP-4 | BVSVP4SVS002 | N | 11 Sep 2014 | 3.5 - 6 | TO15 | VOC | n-Octane | 200 U | | 200 | | µg/m3 | | NC |
| GS | BVSVP-4 | BVSVP4SVS002 | N | 11 Sep 2014 | 3.5 - 6 | TO15 | VOC | o-Xylene | 10 U | 3 | 10 | | µg/m3 | | N |
| GS | BVSVP-4 | BVSVP4SVS002 | N | 11 Sep 2014 | 3.5 - 6 | TO15 | VOC | Propane | 200 U | | 200 | | µg/m3 | | NC |
| GS | BVSVP-4 | BVSVP4SVS002 | N | 11 Sep 2014 | 3.5 - 6 | TO15 | VOC | Tetrachloroethene | 10 U | 2.8 | 10 | | µg/m3 | | N |

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**Test Stand Biovent Analytical Data**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | FSP SL | Units | FSP Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| GS | BVSVP-4 | BVSVP4SVS002 | N | 11 Sep 2014 | 3.5 - 6 | TO15 | VOC | Toluene | 10 U | 3.4 | 10 | | µg/m3 | | N |
| GS | BVSVP-4 | BVSVP4SVS002 | N | 11 Sep 2014 | 3.5 - 6 | TO15 | VOC | trans-1,2-Dichloroethene | 10 U | 3.8 | 10 | | µg/m3 | | N |
| GS | BVSVP-4 | BVSVP4SVS002 | N | 11 Sep 2014 | 3.5 - 6 | TO15 | VOC | Trichloroethene | 2500 = | 11 | 40 | | µg/m3 | | Y |
| GS | BVSVP-4 | BVSVP4SVS002 | N | 11 Sep 2014 | 3.5 - 6 | TO15 | VOC | Trichlorofluoromethane | 10 U | 3.4 | 10 | | µg/m3 | | N |
| GS | BVSVP-4 | BVSVP4SVS002 | N | 11 Sep 2014 | 3.5 - 6 | TO15 | VOC | Trichloromethane (Chloroform) | 10 U | 3.4 | 10 | | µg/m3 | | N |
| GS | BVSVP-4 | BVSVP4SVS002 | N | 11 Sep 2014 | 3.5 - 6 | TO15 | VOC | Vinyl chloride | 10 U | 3.4 | 10 | | µg/m3 | | N |
| SO | BVBS1276 | BVBS1276S001 | N | 16 Jul 2014 | 2 - 3 | SW9045D | GENCHEM | pH | 7.4 = | | | | PH UNITS | | NC |
| SO | BVBS1276 | BVBS1276S001 | N | 16 Jul 2014 | 2 - 3 | Walkley-Black | GENCHEM | Total Organic Carbon | 629 U | 629 | 629 | | mg/kg | | NC |
| SO | BVBS1276 | BVBS1276S001 | N | 16 Jul 2014 | 2 - 3 | M8015D | HC | Diesel Range Organics (C12-C14) | 5400 U | 2700 | 5400 | 5000 | µg/kg | X | N |
| SO | BVBS1276 | BVBS1276S001 | N | 16 Jul 2014 | 2 - 3 | M8015D | HC | Diesel Range Organics (C15-C20) | 5400 U | 2700 | 5400 | 5000 | µg/kg | X | N |
| SO | BVBS1276 | BVBS1276S001 | N | 16 Jul 2014 | 2 - 3 | M8015D | HC | Diesel Range Organics (C21-C30) | 5400 U | 2700 | 5400 | 5000 | µg/kg | X | N |
| SO | BVBS1276 | BVBS1276S001 | N | 16 Jul 2014 | 2 - 3 | M8015D | HC | Diesel Range Organics (C8-C11) | 5400 U | 2700 | 5400 | 1000 | µg/kg | X | RL |
| SO | BVBS1276 | BVBS1276S001 | N | 16 Jul 2014 | 2 - 3 | SW8015B | HC | GRO (C6-C12) | 1000 U | 510 | 1000 | 1000 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S001 | N | 16 Jul 2014 | 2 - 3 | M8015D | HC | ORO (C31-C40) | 11000 U | 5400 | 11000 | 10000 | µg/kg | X | N |
| SO | BVBS1276 | BVBS1276S001 | N | 16 Jul 2014 | 2 - 3 | M8015D | HC | TOTAL EFH(C8-C40) | 5400 U | 2700 | 5400 | 10000 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S001 | N | 16 Jul 2014 | 2 - 3 | SW8270C-SIM | PAH | 1-Methylnaphthalene | 11 U | 5.4 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1276 | BVBS1276S001 | N | 16 Jul 2014 | 2 - 3 | SW8270C-SIM | PAH | 2-Methylnaphthalene | 11 U | 5.4 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1276 | BVBS1276S001 | N | 16 Jul 2014 | 2 - 3 | SW8270C-SIM | PAH | Acenaphthene | 11 U | 5.4 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1276 | BVBS1276S001 | N | 16 Jul 2014 | 2 - 3 | SW8270C-SIM | PAH | Acenaphthylene | 11 U | 5.4 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1276 | BVBS1276S001 | N | 16 Jul 2014 | 2 - 3 | SW8270C-SIM | PAH | Anthracene | 11 U | 5.4 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1276 | BVBS1276S001 | N | 16 Jul 2014 | 2 - 3 | SW8270C-SIM | PAH | Benzo(a)anthracene | 11 U | 5.4 | 11 | | µg/kg | | NC |
| SO | BVBS1276 | BVBS1276S001 | N | 16 Jul 2014 | 2 - 3 | SW8270C-SIM | PAH | Benzo(a)pyrene | 11 U | 5.4 | 11 | | µg/kg | | NC |
| SO | BVBS1276 | BVBS1276S001 | N | 16 Jul 2014 | 2 - 3 | SW8270C-SIM | PAH | Benzo(b)fluoranthene | 11 U | 5.4 | 11 | | µg/kg | | NC |
| SO | BVBS1276 | BVBS1276S001 | N | 16 Jul 2014 | 2 - 3 | SW8270C-SIM | PAH | Benzo(ghi)perylene | 11 U | 5.4 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1276 | BVBS1276S001 | N | 16 Jul 2014 | 2 - 3 | SW8270C-SIM | PAH | Benzo(k)fluoranthene | 11 U | 5.4 | 11 | | µg/kg | | NC |
| SO | BVBS1276 | BVBS1276S001 | N | 16 Jul 2014 | 2 - 3 | SW8270C-SIM | PAH | Chrysene | 11 U | 5.4 | 11 | | µg/kg | | NC |
| SO | BVBS1276 | BVBS1276S001 | N | 16 Jul 2014 | 2 - 3 | SW8270C-SIM | PAH | Dibenzo(a,h)anthracene | 11 U | 5.4 | 11 | | µg/kg | | NC |
| SO | BVBS1276 | BVBS1276S001 | N | 16 Jul 2014 | 2 - 3 | SW8270C-SIM | PAH | Fluoranthene | 11 U | 5.4 | 11 | 5.2 | µg/kg | X | RL |
| SO | BVBS1276 | BVBS1276S001 | N | 16 Jul 2014 | 2 - 3 | SW8270C-SIM | PAH | Fluorene | 11 U | 5.4 | 11 | 3.8 | µg/kg | X | RL |
| SO | BVBS1276 | BVBS1276S001 | N | 16 Jul 2014 | 2 - 3 | SW8270C-SIM | PAH | Indeno(1,2,3-cd)pyrene | 11 U | 5.4 | 11 | | µg/kg | | NC |
| SO | BVBS1276 | BVBS1276S001 | N | 16 Jul 2014 | 2 - 3 | SW8270C-SIM | PAH | Naphthalene | 11 U | 5.4 | 11 | 3.6 | µg/kg | X | RL |
| SO | BVBS1276 | BVBS1276S001 | N | 16 Jul 2014 | 2 - 3 | SW8270C-SIM | PAH | PAHTEQM | 0 U | | | 4.47 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S001 | N | 16 Jul 2014 | 2 - 3 | SW8270C-SIM | PAH | Phenanthrene | 11 U | 5.4 | 11 | 3.9 | µg/kg | X | RL |
| SO | BVBS1276 | BVBS1276S001 | N | 16 Jul 2014 | 2 - 3 | SW8270C-SIM | PAH | Pyrene | 11 U | 5.4 | 11 | 5.6 | µg/kg | X | N |
| SO | BVBS1276 | BVBS1276S001 | N | 16 Jul 2014 | 2 - 3 | SW8270C-SIM | PHTH | Bis(2-ethylhexyl)phthalate | 21 U | 11 | 21 | 61 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S001 | N | 16 Jul 2014 | 2 - 3 | SW8270C-SIM | PHTH | Butyl benzyl phthalate | 21 U | 11 | 21 | 100 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S001 | N | 16 Jul 2014 | 2 - 3 | SW8270C-SIM | PHTH | Diethyl phthalate | 21 U | 11 | 21 | 27 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S001 | N | 16 Jul 2014 | 2 - 3 | SW8270C-SIM | PHTH | Dimethyl phthalate | 21 U | 11 | 21 | 27 | µg/kg | | N |

APPENDIX D-1

**Test Stand Biovent Analytical Data**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | FSP SL | Units | FSP Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1276 | BVBS1276S001 | N | 16 Jul 2014 | 2 - 3 | SW8270C-SIM | PHTH | Di-n-butyl phthalate | 21 U | 11 | 21 | 27 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S001 | N | 16 Jul 2014 | 2 - 3 | SW8270C-SIM | PHTH | Di-n-octyl phthalate | 21 U | 11 | 21 | 27 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | SVOC | Diisopropyl ether | 1 U | 1 | 10 | 10 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S001 | N | 16 Jul 2014 | 2 - 3 | SW8270C-SIM | SVOC | n-Nitrosodimethylamine | 21 U | 11 | 21 | 10 | µg/kg | X | RL |
| SO | BVBS1276 | BVBS1276S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | SVOC | tert-Amyl methyl ether | 1 U | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | SVOC | tert-Butyl alcohol | 10 U | 10 | 51 | 50 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | SVOC | tert-Butyl ethyl ether | 1 U | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | 1,1,1,2-Tetrachloroethane | 1 U | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | 1,1,1-Trichloroethane | 1 U | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | 1,1,2,2-Tetrachloroethane | 1 U | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | 1,1,2-Trichloro-1,2,2-trifluoroethane | 2.1 U | 2.1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | 1,1,2-Trichloroethane | 1 U | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | 1,1-Dichloroethane | 1 U | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | 1,1-Dichloroethene | 1 U | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | 1,1-Dichloropropene | 1 U | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | 1,2,3-Trichlorobenzene | 2.1 U | 2.1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | 1,2,3-Trichloropropane | 2.1 U | 2.1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | 1,2,4-Trichlorobenzene | 2.1 U | 2.1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | 1,2,4-Trimethylbenzene | 1 U | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | 1,2-Dibromo-3-chloropropane | 2.1 U | 2.1 | 10 | 10 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | 1,2-Dibromoethane (EDB) | 1 U | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | 1,2-Dichlorobenzene | 1 U | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | 1,2-Dichloroethane | 1 U | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | 1,2-Dichloropropane | 1 U | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | 1,3,5-Trimethylbenzene | 1 U | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | 1,3-Dichlorobenzene | 1 U | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | 1,3-Dichloropropane | 1 U | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | 1,4-Dichlorobenzene | 1 U | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | 2,2-Dichloropropane | 2.1 U | 2.1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | 2-Butanone (MEK) | 5.1 U | 5.1 | 21 | 20 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | 2-Chloro-1,1,1-trifluoroethane | 2.1 U | 2.1 | 10 | 10 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | 2-Chloroethyl vinyl ether | 2.1 U | 2.1 | 10 | 10 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | 2-Chlorotoluene | 1 U | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | 2-Hexanone | 5.1 U | 5.1 | 10 | 10 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | 4-Chlorotoluene | 1 U | 1 | 10 | 10 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | 4-Methyl-2-pentanone (MIBK) | 5.1 U | 5.1 | 10 | 10 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | Acetone | 5.1 U | 5.1 | 21 | 20 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | Benzene | 1 U | 1 | 5.1 | 5 | µg/kg | | N |

APPENDIX D-1

**Test Stand Biovent Analytical Data**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | FSP SL | Units | FSP Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1276 | BVBS1276S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | Bromobenzene | 1 U | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | Bromochloromethane | 1 U | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | Bromodichloromethane | 1 U | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | Bromoform | 2.1 U | 2.1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | Bromomethane | 2.1 U | 2.1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | Carbon tetrachloride | 1 U | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | Chlorobenzene | 1 U | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | Chloroethane | 2.1 U | 2.1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | Chloromethane | 2.1 U | 2.1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | Chlorotrifluoroethylene | 2.1 U | 2.1 | 10 | 10 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | cis-1,2-Dichloroethene | 1 U | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | cis-1,3-Dichloropropene | 1 U | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | Dibromochloromethane | 1 U | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | Dibromomethane | 1 U | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | Dichlorodifluoromethane | 2.1 U | 2.1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | Ethylbenzene | 1 U | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | Hexachlorobutadiene | 2.1 U | 2.1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | Isopropylbenzene | 1 U | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | m,p-Xylenes | 2.1 U | 2.1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | Methylene chloride | 2.1 J | 2.1 | 10 | 10 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | Methyl-tert-butyl Ether (MTBE) | 1 U | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | n-butylbenzene | 1 U | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | n-Propylbenzene | 1 U | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | o-Xylene | 1 U | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | p-Isopropyltoluene | 1 U | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | sec-Butylbenzene | 1 U | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | Styrene | 1 U | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | tert-Butylbenzene | 1 U | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | Tetrachloroethene | 1 U | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | Toluene | 1 U | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | trans-1,2-Dichloroethene | 1 U | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | trans-1,3-Dichloropropene | 1 U | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | Trichloroethene | 1 U | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | Trichlorofluoromethane | 2.1 U | 2.1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | Trichloromethane (Chloroform) | 1 U | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | Vinyl chloride | 2.1 U | 2.1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S001S | FS | 16 Jul 2014 | 2 - 3 | SW9045D | GENCHEM | pH | 6.65 = | | | | PH UNITS | | NC |
| SO | BVBS1276 | BVBS1276S001S | FS | 16 Jul 2014 | 2 - 3 | SW9060 | GENCHEM | Total Organic Carbon | 343 = | 33.3 | 100 | | mg/kg | | NC |

APPENDIX D-1

**Test Stand Biovent Analytical Data**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | FSP SL | Units | FSP Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1276 | BVBS1276S001S | FS | 16 Jul 2014 | 2 - 3 | M8015D | HC | Diesel Range Organics (C12-C14) | 5300 U | 5300 | 5300 | 5000 | µg/kg | X | RL |
| SO | BVBS1276 | BVBS1276S001S | FS | 16 Jul 2014 | 2 - 3 | M8015D | HC | Diesel Range Organics (C15-C20) | 5300 U | 5300 | 5300 | 5000 | µg/kg | X | RL |
| SO | BVBS1276 | BVBS1276S001S | FS | 16 Jul 2014 | 2 - 3 | M8015D | HC | Diesel Range Organics (C21-C30) | 5300 U | 5300 | 5300 | 5000 | µg/kg | X | RL |
| SO | BVBS1276 | BVBS1276S001S | FS | 16 Jul 2014 | 2 - 3 | M8015D | HC | Diesel Range Organics (C8-C11) | 5300 U | 5300 | 5300 | 1000 | µg/kg | X | RL |
| SO | BVBS1276 | BVBS1276S001S | FS | 16 Jul 2014 | 2 - 3 | SW8015B | HC | GRO (C4-C12) | 530 U | -5.3E+07 | 530 | 1000 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S001S | FS | 16 Jul 2014 | 2 - 3 | M8015D | HC | ORO (C31-C40) | 5300 U | 5300 | 5300 | 10000 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S001S | FS | 16 Jul 2014 | 2 - 3 | SW8270C-SIM | PAH | 1-Methylnaphthalene | 11 U | 11 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1276 | BVBS1276S001S | FS | 16 Jul 2014 | 2 - 3 | SW8270C-SIM | PAH | 2-Methylnaphthalene | 5 J | 3.8 | 11 | 2.5 | µg/kg | X | Y |
| SO | BVBS1276 | BVBS1276S001S | FS | 16 Jul 2014 | 2 - 3 | SW8270C-SIM | PAH | Acenaphthene | 11 U | 11 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1276 | BVBS1276S001S | FS | 16 Jul 2014 | 2 - 3 | SW8270C-SIM | PAH | Acenaphthylene | 11 U | 11 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1276 | BVBS1276S001S | FS | 16 Jul 2014 | 2 - 3 | SW8270C-SIM | PAH | Anthracene | 11 U | 11 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1276 | BVBS1276S001S | FS | 16 Jul 2014 | 2 - 3 | SW8270C-SIM | PAH | Benzo(a)anthracene | 11 U | 11 | 11 | | µg/kg | | NC |
| SO | BVBS1276 | BVBS1276S001S | FS | 16 Jul 2014 | 2 - 3 | SW8270C-SIM | PAH | Benzo(a)pyrene | 11 U | 11 | 11 | | µg/kg | | NC |
| SO | BVBS1276 | BVBS1276S001S | FS | 16 Jul 2014 | 2 - 3 | SW8270C-SIM | PAH | Benzo(b)fluoranthene | 11 U | 11 | 11 | | µg/kg | | NC |
| SO | BVBS1276 | BVBS1276S001S | FS | 16 Jul 2014 | 2 - 3 | SW8270C-SIM | PAH | Benzo(ghi)perylene | 11 U | 11 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1276 | BVBS1276S001S | FS | 16 Jul 2014 | 2 - 3 | SW8270C-SIM | PAH | Benzo(k)fluoranthene | 11 U | 11 | 11 | | µg/kg | | NC |
| SO | BVBS1276 | BVBS1276S001S | FS | 16 Jul 2014 | 2 - 3 | SW8270C-SIM | PAH | Chrysene | 11 U | 11 | 11 | | µg/kg | | NC |
| SO | BVBS1276 | BVBS1276S001S | FS | 16 Jul 2014 | 2 - 3 | SW8270C-SIM | PAH | Dibenzo(a,h)anthracene | 11 U | 11 | 11 | | µg/kg | | NC |
| SO | BVBS1276 | BVBS1276S001S | FS | 16 Jul 2014 | 2 - 3 | SW8270C-SIM | PAH | Fluoranthene | 11 U | 11 | 11 | 5.2 | µg/kg | X | RL |
| SO | BVBS1276 | BVBS1276S001S | FS | 16 Jul 2014 | 2 - 3 | SW8270C-SIM | PAH | Fluorene | 11 U | 11 | 11 | 3.8 | µg/kg | X | RL |
| SO | BVBS1276 | BVBS1276S001S | FS | 16 Jul 2014 | 2 - 3 | SW8270C-SIM | PAH | Indeno(1,2,3-cd)pyrene | 11 U | 11 | 11 | | µg/kg | | NC |
| SO | BVBS1276 | BVBS1276S001S | FS | 16 Jul 2014 | 2 - 3 | SW8270C-SIM | PAH | Naphthalene | 46 = | 11 | 11 | 3.6 | µg/kg | X | Y |
| SO | BVBS1276 | BVBS1276S001S | FS | 16 Jul 2014 | 2 - 3 | SW8270C-SIM | PAH | PAHTEQM | 0 U | | | 4.47 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S001S | FS | 16 Jul 2014 | 2 - 3 | SW8270C-SIM | PAH | Phenanthrene | 11 U | 11 | 11 | 3.9 | µg/kg | X | RL |
| SO | BVBS1276 | BVBS1276S001S | FS | 16 Jul 2014 | 2 - 3 | SW8270C-SIM | PAH | Pyrene | 11 U | 11 | 11 | 5.6 | µg/kg | X | RL |
| SO | BVBS1276 | BVBS1276S001S | FS | 16 Jul 2014 | 2 - 3 | SW8270C-SIM | PHTH | Bis(2-ethylhexyl)phthalate | 5.2 J | 4.4 | 11 | 61 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S001S | FS | 16 Jul 2014 | 2 - 3 | SW8270C-SIM | PHTH | Butyl benzyl phthalate | 11 U | 11 | 11 | 100 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S001S | FS | 16 Jul 2014 | 2 - 3 | SW8270C-SIM | PHTH | Diethyl phthalate | 11 U | 11 | 11 | 27 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S001S | FS | 16 Jul 2014 | 2 - 3 | SW8270C-SIM | PHTH | Dimethyl phthalate | 390 = | 11 | 11 | 27 | µg/kg | X | Y |
| SO | BVBS1276 | BVBS1276S001S | FS | 16 Jul 2014 | 2 - 3 | SW8270C-SIM | PHTH | Di-n-butyl phthalate | 7.2 J | 5.5 | 11 | 27 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S001S | FS | 16 Jul 2014 | 2 - 3 | SW8270C-SIM | PHTH | Di-n-octyl phthalate | 11 U | 11 | 11 | 27 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S001S | FS | 16 Jul 2014 | 2 - 3 | SW8270C-SIM | SVOC | n-Nitrosodimethylamine | 11 U | 11 | 11 | 10 | µg/kg | X | RL |
| SO | BVBS1276 | BVBS1276S001S | FS | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | 1,1,1,2-Tetrachloroethane | 0.25 U | 0.52 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S001S | FS | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | 1,1,1-Trichloroethane | 0.23 U | 0.52 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S001S | FS | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | 1,1,2,2-Tetrachloroethane | 0.36 U | 0.52 | 21 | 5 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S001S | FS | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | 1,1,2-Trichloro-1,2,2-trifluoroethane | 0.37 U | 0.52 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S001S | FS | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | 1,1,2-Trichloroethane | 0.37 U | 0.52 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S001S | FS | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | 1,1-Dichloroethane | 0.22 U | 0.52 | 5.2 | 5 | µg/kg | | N |

APPENDIX D-1

**Test Stand Biovent Analytical Data**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | FSP SL | Units | FSP Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1276 | BVBS1276S001S | FS | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | 1,1-Dichloroethene | 0.36 U | 0.52 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S001S | FS | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | 1,1-Dichloropropene | 0.34 U | 0.52 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S001S | FS | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | 1,2,3-Trichlorobenzene | 0.95 U | 2.1 | 21 | 5 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S001S | FS | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | 1,2,3-Trichloropropane | 0.86 U | 2.1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S001S | FS | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | 1,2,4-Trichlorobenzene | 0.32 U | 0.52 | 21 | 5 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S001S | FS | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | 1,2,4-Trimethylbenzene | 0.61 U | 2.1 | 10 | 5 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S001S | FS | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | 1,2-Dibromo-3-chloropropane | 1.8 U | 2.1 | 10 | 10 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S001S | FS | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | 1,2-Dibromoethane (EDB) | 0.27 U | 0.52 | 10 | 5 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S001S | FS | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | 1,2-Dichlorobenzene | 0.24 U | 0.52 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S001S | FS | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | 1,2-Dichloroethane | 0.33 U | 0.52 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S001S | FS | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | 1,2-Dichloropropane | 0.46 U | 0.52 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S001S | FS | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | 1,3,5-Trimethylbenzene | 0.57 U | 2.1 | 10 | 5 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S001S | FS | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | 1,3-Dichlorobenzene | 0.18 U | 0.52 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S001S | FS | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | 1,3-Dichloropropane | 0.26 U | 0.52 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S001S | FS | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | 1,4-Dichlorobenzene | 0.23 U | 0.52 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S001S | FS | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | 2-Butanone (MEK) | 3.9 U | 5.2 | 10 | 20 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S001S | FS | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | 2-Chloroethyl vinyl ether | 8.7 UJ | 52 | 52 | 10 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S001S | FS | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | 2-Chlorotoluene | 0.24 U | 0.52 | 10 | 5 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S001S | FS | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | 2-Hexanone | 1.8 U | 2.1 | 10 | 10 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S001S | FS | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | 4-Chlorotoluene | 0.22 U | 0.52 | 10 | 10 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S001S | FS | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | 4-Methyl-2-pentanone (MIBK) | 4.5 U | 5.2 | 10 | 10 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S001S | FS | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | Acetone | 6.5 U | 10 | 21 | 20 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S001S | FS | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | Benzene | 0.14 U | 0.21 | 0.52 | 5 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S001S | FS | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | Bromobenzene | 0.22 U | 0.52 | 21 | 5 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S001S | FS | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | Bromochloromethane | 0.72 U | 2.1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S001S | FS | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | Bromodichloromethane | 0.24 U | 0.52 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S001S | FS | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | Bromoform | 0.83 U | 2.1 | 10 | 5 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S001S | FS | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | Bromomethane | 9.8 U | 10 | 21 | 5 | µg/kg | X | RL |
| SO | BVBS1276 | BVBS1276S001S | FS | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | Carbon tetrachloride | 0.29 U | 0.52 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S001S | FS | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | Chlorobenzene | 0.23 U | 0.52 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S001S | FS | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | Chloroethane | 1.6 U | 2.1 | 10 | 5 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S001S | FS | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | Chloromethane | 0.32 U | 0.52 | 10 | 5 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S001S | FS | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | cis-1,2-Dichloroethene | 0.29 U | 0.52 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S001S | FS | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | cis-1,3-Dichloropropene | 0.26 U | 0.52 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S001S | FS | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | Dibromochloromethane | 0.59 U | 2.1 | 10 | 5 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S001S | FS | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | Dibromomethane | 0.81 U | 2.1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S001S | FS | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | Dichlorodifluoromethane | 0.46 U | 0.52 | 10 | 5 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S001S | FS | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | Ethylbenzene | 0.16 U | 0.21 | 10 | 5 | µg/kg | | N |

APPENDIX D-1

**Test Stand Biovent Analytical Data**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | FSP SL | Units | FSP Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1276 | BVBS1276S001S | FS | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | Hexachlorobutadiene | 0.33 U | 0.52 | 21 | 5 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S001S | FS | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | Isopropylbenzene | 0.57 U | 2.1 | 10 | 5 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S001S | FS | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | m,p-Xylenes | 0.28 U | 0.42 | 21 | 5 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S001S | FS | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | Methylene chloride | 1.4 U | 2.1 | 5.2 | 10 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S001S | FS | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | Methyl-tert-butyl Ether (MTBE) | 0.31 U | 0.52 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S001S | FS | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | n-butylbenzene | 0.16 U | 0.21 | 21 | 5 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S001S | FS | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | n-Propylbenzene | 0.52 U | 2.1 | 10 | 5 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S001S | FS | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | o-Xylene | 0.58 U | 2.1 | 10 | 5 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S001S | FS | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | p-Isopropyltoluene | 0.66 U | 2.1 | 21 | 5 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S001S | FS | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | sec-Butylbenzene | 0.6 U | 2.1 | 21 | 5 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S001S | FS | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | Styrene | 0.63 U | 2.1 | 21 | 5 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S001S | FS | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | tert-Butylbenzene | 0.16 U | 0.21 | 21 | 5 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S001S | FS | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | Tetrachloroethene | 0.22 U | 0.52 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S001S | FS | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | Toluene | 0.54 U | 2.1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S001S | FS | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | trans-1,2-Dichloroethene | 0.53 U | 2.1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S001S | FS | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | trans-1,3-Dichloropropene | 0.63 U | 2.1 | 10 | 5 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S001S | FS | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | Trichloroethene | 0.86 J | 0.31 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S001S | FS | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | Trichlorofluoromethane | 0.39 U | 0.52 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S001S | FS | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | Trichloromethane (Chloroform) | 0.25 U | 0.52 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S001S | FS | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | Vinyl chloride | 0.52 U | 2.1 | 10 | 5 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S002 | N | 16 Jul 2014 | 5 - 6 | SW9045D | GENCHEM | pH | 6.92 = | | | | PH UNITS | | NC |
| SO | BVBS1276 | BVBS1276S002 | N | 16 Jul 2014 | 5 - 6 | Walkley-Black | GENCHEM | Total Organic Carbon | 654 U | 654 | 654 | | mg/kg | | NC |
| SO | BVBS1276 | BVBS1276S002 | N | 16 Jul 2014 | 5 - 6 | M8015D | HC | Diesel Range Organics (C12-C14) | 5500 U | 2700 | 5500 | 5000 | µg/kg | X | N |
| SO | BVBS1276 | BVBS1276S002 | N | 16 Jul 2014 | 5 - 6 | M8015D | HC | Diesel Range Organics (C15-C20) | 5500 U | 2700 | 5500 | 5000 | µg/kg | X | N |
| SO | BVBS1276 | BVBS1276S002 | N | 16 Jul 2014 | 5 - 6 | M8015D | HC | Diesel Range Organics (C21-C30) | 5500 U | 2700 | 5500 | 5000 | µg/kg | X | N |
| SO | BVBS1276 | BVBS1276S002 | N | 16 Jul 2014 | 5 - 6 | M8015D | HC | Diesel Range Organics (C8-C11) | 5500 U | 2700 | 5500 | 1000 | µg/kg | X | RL |
| SO | BVBS1276 | BVBS1276S002 | N | 16 Jul 2014 | 5 - 6 | SW8015B | HC | GRO (C6-C12) | 1000 U | 510 | 1000 | 1000 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S002 | N | 16 Jul 2014 | 5 - 6 | M8015D | HC | ORO (C31-C40) | 11000 U | 5500 | 11000 | 10000 | µg/kg | X | N |
| SO | BVBS1276 | BVBS1276S002 | N | 16 Jul 2014 | 5 - 6 | M8015D | HC | TOTAL EFH(C8-C40) | 5500 U | 2700 | 5500 | 10000 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S002 | N | 16 Jul 2014 | 5 - 6 | SW8270C-SIM | PAH | 1-Methylnaphthalene | 11 U | 5.5 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1276 | BVBS1276S002 | N | 16 Jul 2014 | 5 - 6 | SW8270C-SIM | PAH | 2-Methylnaphthalene | 11 U | 5.5 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1276 | BVBS1276S002 | N | 16 Jul 2014 | 5 - 6 | SW8270C-SIM | PAH | Acenaphthene | 11 U | 5.5 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1276 | BVBS1276S002 | N | 16 Jul 2014 | 5 - 6 | SW8270C-SIM | PAH | Acenaphthylene | 11 U | 5.5 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1276 | BVBS1276S002 | N | 16 Jul 2014 | 5 - 6 | SW8270C-SIM | PAH | Anthracene | 11 U | 5.5 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1276 | BVBS1276S002 | N | 16 Jul 2014 | 5 - 6 | SW8270C-SIM | PAH | Benzo(a)anthracene | 11 U | 5.5 | 11 | | µg/kg | | NC |
| SO | BVBS1276 | BVBS1276S002 | N | 16 Jul 2014 | 5 - 6 | SW8270C-SIM | PAH | Benzo(a)pyrene | 11 U | 5.5 | 11 | | µg/kg | | NC |
| SO | BVBS1276 | BVBS1276S002 | N | 16 Jul 2014 | 5 - 6 | SW8270C-SIM | PAH | Benzo(b)fluoranthene | 11 U | 5.5 | 11 | | µg/kg | | NC |
| SO | BVBS1276 | BVBS1276S002 | N | 16 Jul 2014 | 5 - 6 | SW8270C-SIM | PAH | Benzo(ghi)perylene | 11 U | 5.5 | 11 | 2.5 | µg/kg | X | RL |

APPENDIX D-1

**Test Stand Biovent Analytical Data**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | FSP SL | Units | FSP Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1276 | BVBS1276S002 | N | 16 Jul 2014 | 5 - 6 | SW8270C-SIM | PAH | Benzo(k)fluoranthene | 11 U | 5.5 | 11 | | µg/kg | | NC |
| SO | BVBS1276 | BVBS1276S002 | N | 16 Jul 2014 | 5 - 6 | SW8270C-SIM | PAH | Chrysene | 11 U | 5.5 | 11 | | µg/kg | | NC |
| SO | BVBS1276 | BVBS1276S002 | N | 16 Jul 2014 | 5 - 6 | SW8270C-SIM | PAH | Dibenzo(a,h)anthracene | 11 U | 5.5 | 11 | | µg/kg | | NC |
| SO | BVBS1276 | BVBS1276S002 | N | 16 Jul 2014 | 5 - 6 | SW8270C-SIM | PAH | Fluoranthene | 11 U | 5.5 | 11 | 5.2 | µg/kg | X | RL |
| SO | BVBS1276 | BVBS1276S002 | N | 16 Jul 2014 | 5 - 6 | SW8270C-SIM | PAH | Fluorene | 11 U | 5.5 | 11 | 3.8 | µg/kg | X | RL |
| SO | BVBS1276 | BVBS1276S002 | N | 16 Jul 2014 | 5 - 6 | SW8270C-SIM | PAH | Indeno(1,2,3-cd)pyrene | 11 U | 5.5 | 11 | | µg/kg | | NC |
| SO | BVBS1276 | BVBS1276S002 | N | 16 Jul 2014 | 5 - 6 | SW8270C-SIM | PAH | Naphthalene | 11 U | 5.5 | 11 | 3.6 | µg/kg | X | RL |
| SO | BVBS1276 | BVBS1276S002 | N | 16 Jul 2014 | 5 - 6 | SW8270C-SIM | PAH | PAHTEQM | 0 U | | | 4.47 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S002 | N | 16 Jul 2014 | 5 - 6 | SW8270C-SIM | PAH | Phenanthrene | 11 U | 5.5 | 11 | 3.9 | µg/kg | X | RL |
| SO | BVBS1276 | BVBS1276S002 | N | 16 Jul 2014 | 5 - 6 | SW8270C-SIM | PAH | Pyrene | 11 U | 5.5 | 11 | 5.6 | µg/kg | X | N |
| SO | BVBS1276 | BVBS1276S002 | N | 16 Jul 2014 | 5 - 6 | SW8270C-SIM | PHTH | Bis(2-ethylhexyl)phthalate | 22 U | 11 | 22 | 61 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S002 | N | 16 Jul 2014 | 5 - 6 | SW8270C-SIM | PHTH | Butyl benzyl phthalate | 22 U | 11 | 22 | 100 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S002 | N | 16 Jul 2014 | 5 - 6 | SW8270C-SIM | PHTH | Diethyl phthalate | 22 U | 11 | 22 | 27 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S002 | N | 16 Jul 2014 | 5 - 6 | SW8270C-SIM | PHTH | Dimethyl phthalate | 22 U | 11 | 22 | 27 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S002 | N | 16 Jul 2014 | 5 - 6 | SW8270C-SIM | PHTH | Di-n-butyl phthalate | 22 U | 11 | 22 | 27 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S002 | N | 16 Jul 2014 | 5 - 6 | SW8270C-SIM | PHTH | Di-n-octyl phthalate | 22 U | 11 | 22 | 27 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | SVOC | Diisopropyl ether | 1.1 U | 1.1 | 11 | 10 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S002 | N | 16 Jul 2014 | 5 - 6 | SW8270C-SIM | SVOC | n-Nitrosodimethylamine | 22 U | 11 | 22 | 10 | µg/kg | X | RL |
| SO | BVBS1276 | BVBS1276S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | SVOC | tert-Amyl methyl ether | 1.1 U | 1.1 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | SVOC | tert-Butyl alcohol | 11 U | 11 | 56 | 50 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | SVOC | tert-Butyl ethyl ether | 1.1 U | 1.1 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | 1,1,1,2-Tetrachloroethane | 1.1 U | 1.1 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | 1,1,1-Trichloroethane | 1.1 U | 1.1 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | 1,1,2,2-Tetrachloroethane | 1.1 U | 1.1 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | 1,1,2-Trichloro-1,2,2-trifluoroethane | 2.2 U | 2.2 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | 1,1,2-Trichloroethane | 1.1 U | 1.1 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | 1,1-Dichloroethane | 1.1 U | 1.1 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | 1,1-Dichloroethene | 1.1 U | 1.1 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | 1,1-Dichloropropene | 1.1 U | 1.1 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | 1,2,3-Trichlorobenzene | 2.2 U | 2.2 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | 1,2,3-Trichloropropane | 2.2 U | 2.2 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | 1,2,4-Trichlorobenzene | 2.2 U | 2.2 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | 1,2,4-Trimethylbenzene | 1.1 U | 1.1 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | 1,2-Dibromo-3-chloropropane | 2.2 U | 2.2 | 11 | 10 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | 1,2-Dibromoethane (EDB) | 1.1 U | 1.1 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | 1,2-Dichlorobenzene | 1.1 U | 1.1 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | 1,2-Dichloroethane | 1.1 U | 1.1 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | 1,2-Dichloropropane | 1.1 U | 1.1 | 5.6 | 5 | µg/kg | | N |

APPENDIX D-1

**Test Stand Biovent Analytical Data**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | FSP SL | Units | FSP Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1276 | BVBS1276S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | 1,3,5-Trimethylbenzene | 1.1 U | 1.1 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | 1,3-Dichlorobenzene | 1.1 U | 1.1 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | 1,3-Dichloropropane | 1.1 U | 1.1 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | 1,4-Dichlorobenzene | 1.1 U | 1.1 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | 2,2-Dichloropropane | 2.2 U | 2.2 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | 2-Butanone (MEK) | 5.6 U | 5.6 | 22 | 20 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | 2-Chloro-1,1,1-trifluoroethane | 2.2 U | 2.2 | 11 | 10 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | 2-Chloroethyl vinyl ether | 2.2 U | 2.2 | 11 | 10 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | 2-Chlorotoluene | 1.1 U | 1.1 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | 2-Hexanone | 5.6 U | 5.6 | 11 | 10 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | 4-Chlorotoluene | 1.1 U | 1.1 | 11 | 10 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | 4-Methyl-2-pentanone (MIBK) | 5.6 U | 5.6 | 11 | 10 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | Acetone | 5.6 U | 5.6 | 22 | 20 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | Benzene | 1.1 U | 1.1 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | Bromobenzene | 1.1 U | 1.1 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | Bromochloromethane | 1.1 U | 1.1 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | Bromodichloromethane | 1.1 U | 1.1 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | Bromoform | 2.2 U | 2.2 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | Bromomethane | 2.2 U | 2.2 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | Carbon tetrachloride | 1.1 U | 1.1 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | Chlorobenzene | 1.1 U | 1.1 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | Chloroethane | 2.2 U | 2.2 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | Chloromethane | 2.2 U | 2.2 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | Chlorotrifluoroethylene | 2.2 U | 2.2 | 11 | 10 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | cis-1,2-Dichloroethene | 1.1 U | 1.1 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | cis-1,3-Dichloropropene | 1.1 U | 1.1 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | Dibromochloromethane | 1.1 U | 1.1 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | Dibromomethane | 1.1 U | 1.1 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | Dichlorodifluoromethane | 2.2 U | 2.2 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | Ethylbenzene | 1.1 U | 1.1 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | Hexachlorobutadiene | 2.2 U | 2.2 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | Isopropylbenzene | 1.1 U | 1.1 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | m,p-Xylenes | 2.2 U | 2.2 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | Methylene chloride | 2.3 J | 2.2 | 11 | 10 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | Methyl-tert-butyl Ether (MTBE) | 1.1 U | 1.1 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | n-butylbenzene | 1.1 U | 1.1 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | n-Propylbenzene | 1.1 U | 1.1 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | o-Xylene | 1.1 U | 1.1 | 5.6 | 5 | µg/kg | | N |

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**Test Stand Biovent Analytical Data**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | FSP SL | Units | FSP Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1276 | BVBS1276S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | p-Isopropyltoluene | 1.1 U | 1.1 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | sec-Butylbenzene | 1.1 U | 1.1 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | Styrene | 1.1 U | 1.1 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | tert-Butylbenzene | 1.1 U | 1.1 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | Tetrachloroethene | 1.1 U | 1.1 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | Toluene | 1.1 U | 1.1 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | trans-1,2-Dichloroethene | 1.1 U | 1.1 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | trans-1,3-Dichloropropene | 1.1 U | 1.1 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | Trichloroethene | 1.1 U | 1.1 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | Trichlorofluoromethane | 2.2 U | 2.2 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | Trichloromethane (Chloroform) | 1.1 U | 1.1 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1276 | BVBS1276S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | Vinyl chloride | 2.2 U | 2.2 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S001 | N | 16 Jul 2014 | 2 - 3 | SW9045D | GENCHEM | pH | 8.16 = | | | | PH UNITS | | NC |
| SO | BVBS1277 | BVBS1277S001 | N | 16 Jul 2014 | 2 - 3 | Walkley-Black | GENCHEM | Total Organic Carbon | 629 U | 629 | 629 | | mg/kg | | NC |
| SO | BVBS1277 | BVBS1277S001 | N | 16 Jul 2014 | 2 - 3 | M8015D | HC | Diesel Range Organics (C12-C14) | 5400 U | 2700 | 5400 | 5000 | µg/kg | X | N |
| SO | BVBS1277 | BVBS1277S001 | N | 16 Jul 2014 | 2 - 3 | M8015D | HC | Diesel Range Organics (C15-C20) | 5400 U | 2700 | 5400 | 5000 | µg/kg | X | N |
| SO | BVBS1277 | BVBS1277S001 | N | 16 Jul 2014 | 2 - 3 | M8015D | HC | Diesel Range Organics (C21-C30) | 5400 U | 2700 | 5400 | 5000 | µg/kg | X | N |
| SO | BVBS1277 | BVBS1277S001 | N | 16 Jul 2014 | 2 - 3 | M8015D | HC | Diesel Range Organics (C8-C11) | 5400 U | 2700 | 5400 | 1000 | µg/kg | X | RL |
| SO | BVBS1277 | BVBS1277S001 | N | 16 Jul 2014 | 2 - 3 | SW8015B | HC | GRO (C6-C12) | 1100 U | 530 | 1100 | 1000 | µg/kg | X | N |
| SO | BVBS1277 | BVBS1277S001 | N | 16 Jul 2014 | 2 - 3 | M8015D | HC | ORO (C31-C40) | 11000 U | 5400 | 11000 | 10000 | µg/kg | X | N |
| SO | BVBS1277 | BVBS1277S001 | N | 16 Jul 2014 | 2 - 3 | M8015D | HC | TOTAL EFH(C8-C40) | 5400 U | 2700 | 5400 | 10000 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S001 | N | 16 Jul 2014 | 2 - 3 | SW8270C-SIM | PAH | 1-Methylnaphthalene | 11 U | 5.4 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1277 | BVBS1277S001 | N | 16 Jul 2014 | 2 - 3 | SW8270C-SIM | PAH | 2-Methylnaphthalene | 11 U | 5.4 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1277 | BVBS1277S001 | N | 16 Jul 2014 | 2 - 3 | SW8270C-SIM | PAH | Acenaphthene | 11 U | 5.4 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1277 | BVBS1277S001 | N | 16 Jul 2014 | 2 - 3 | SW8270C-SIM | PAH | Acenaphthylene | 11 U | 5.4 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1277 | BVBS1277S001 | N | 16 Jul 2014 | 2 - 3 | SW8270C-SIM | PAH | Anthracene | 11 U | 5.4 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1277 | BVBS1277S001 | N | 16 Jul 2014 | 2 - 3 | SW8270C-SIM | PAH | Benzo(a)anthracene | 11 U | 5.4 | 11 | | µg/kg | | NC |
| SO | BVBS1277 | BVBS1277S001 | N | 16 Jul 2014 | 2 - 3 | SW8270C-SIM | PAH | Benzo(a)pyrene | 11 U | 5.4 | 11 | | µg/kg | | NC |
| SO | BVBS1277 | BVBS1277S001 | N | 16 Jul 2014 | 2 - 3 | SW8270C-SIM | PAH | Benzo(b)fluoranthene | 11 U | 5.4 | 11 | | µg/kg | | NC |
| SO | BVBS1277 | BVBS1277S001 | N | 16 Jul 2014 | 2 - 3 | SW8270C-SIM | PAH | Benzo(ghi)perylene | 11 U | 5.4 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1277 | BVBS1277S001 | N | 16 Jul 2014 | 2 - 3 | SW8270C-SIM | PAH | Benzo(k)fluoranthene | 11 U | 5.4 | 11 | | µg/kg | | NC |
| SO | BVBS1277 | BVBS1277S001 | N | 16 Jul 2014 | 2 - 3 | SW8270C-SIM | PAH | Chrysene | 11 U | 5.4 | 11 | | µg/kg | | NC |
| SO | BVBS1277 | BVBS1277S001 | N | 16 Jul 2014 | 2 - 3 | SW8270C-SIM | PAH | Dibenzo(a,h)anthracene | 11 U | 5.4 | 11 | | µg/kg | | NC |
| SO | BVBS1277 | BVBS1277S001 | N | 16 Jul 2014 | 2 - 3 | SW8270C-SIM | PAH | Fluoranthene | 11 U | 5.4 | 11 | 5.2 | µg/kg | X | RL |
| SO | BVBS1277 | BVBS1277S001 | N | 16 Jul 2014 | 2 - 3 | SW8270C-SIM | PAH | Fluorene | 11 U | 5.4 | 11 | 3.8 | µg/kg | X | RL |
| SO | BVBS1277 | BVBS1277S001 | N | 16 Jul 2014 | 2 - 3 | SW8270C-SIM | PAH | Indeno(1,2,3-cd)pyrene | 11 U | 5.4 | 11 | | µg/kg | | NC |
| SO | BVBS1277 | BVBS1277S001 | N | 16 Jul 2014 | 2 - 3 | SW8270C-SIM | PAH | Naphthalene | 11 U | 5.4 | 11 | 3.6 | µg/kg | X | RL |
| SO | BVBS1277 | BVBS1277S001 | N | 16 Jul 2014 | 2 - 3 | SW8270C-SIM | PAH | PAHTEQM | 0 U | | | 4.47 | µg/kg | | N |

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**Test Stand Biovent Analytical Data**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | FSP SL | Units | FSP Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1277 | BVBS1277S001 | N | 16 Jul 2014 | 2 - 3 | SW8270C-SIM | PAH | Phenanthrene | 11 U | 5.4 | 11 | 3.9 | µg/kg | X | RL |
| SO | BVBS1277 | BVBS1277S001 | N | 16 Jul 2014 | 2 - 3 | SW8270C-SIM | PAH | Pyrene | 11 U | 5.4 | 11 | 5.6 | µg/kg | X | N |
| SO | BVBS1277 | BVBS1277S001 | N | 16 Jul 2014 | 2 - 3 | SW8270C-SIM | PHTH | Bis(2-ethylhexyl)phthalate | 22 U | 11 | 22 | 61 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S001 | N | 16 Jul 2014 | 2 - 3 | SW8270C-SIM | PHTH | Butyl benzyl phthalate | 22 U | 11 | 22 | 100 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S001 | N | 16 Jul 2014 | 2 - 3 | SW8270C-SIM | PHTH | Diethyl phthalate | 22 U | 11 | 22 | 27 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S001 | N | 16 Jul 2014 | 2 - 3 | SW8270C-SIM | PHTH | Dimethyl phthalate | 22 U | 11 | 22 | 27 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S001 | N | 16 Jul 2014 | 2 - 3 | SW8270C-SIM | PHTH | Di-n-butyl phthalate | 22 U | 11 | 22 | 27 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S001 | N | 16 Jul 2014 | 2 - 3 | SW8270C-SIM | PHTH | Di-n-octyl phthalate | 22 U | 11 | 22 | 27 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | SVOC | Diisopropyl ether | 1.1 U | 1.1 | 11 | 10 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S001 | N | 16 Jul 2014 | 2 - 3 | SW8270C-SIM | SVOC | n-Nitrosodimethylamine | 22 U | 11 | 22 | 10 | µg/kg | X | RL |
| SO | BVBS1277 | BVBS1277S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | SVOC | tert-Amyl methyl ether | 1.1 U | 1.1 | 5.3 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | SVOC | tert-Butyl alcohol | 11 U | 11 | 53 | 50 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | SVOC | tert-Butyl ethyl ether | 1.1 U | 1.1 | 5.3 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | 1,1,1,2-Tetrachloroethane | 1.1 U | 1.1 | 5.3 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | 1,1,1-Trichloroethane | 1.1 U | 1.1 | 5.3 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | 1,1,2,2-Tetrachloroethane | 1.1 U | 1.1 | 5.3 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | 1,1,2-Trichloro-1,2,2-trifluoroethane | 2.1 U | 2.1 | 5.3 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | 1,1,2-Trichloroethane | 1.1 U | 1.1 | 5.3 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | 1,1-Dichloroethane | 1.1 U | 1.1 | 5.3 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | 1,1-Dichloroethene | 1.1 U | 1.1 | 5.3 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | 1,1-Dichloropropene | 1.1 U | 1.1 | 5.3 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | 1,2,3-Trichlorobenzene | 2.1 U | 2.1 | 5.3 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | 1,2,3-Trichloropropane | 2.1 U | 2.1 | 5.3 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | 1,2,4-Trichlorobenzene | 2.1 U | 2.1 | 5.3 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | 1,2,4-Trimethylbenzene | 1.1 U | 1.1 | 5.3 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | 1,2-Dibromo-3-chloropropane | 2.1 U | 2.1 | 11 | 10 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | 1,2-Dibromoethane (EDB) | 1.1 U | 1.1 | 5.3 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | 1,2-Dichlorobenzene | 1.1 U | 1.1 | 5.3 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | 1,2-Dichloroethane | 1.1 U | 1.1 | 5.3 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | 1,2-Dichloropropane | 1.1 U | 1.1 | 5.3 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | 1,3,5-Trimethylbenzene | 1.1 U | 1.1 | 5.3 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | 1,3-Dichlorobenzene | 1.1 U | 1.1 | 5.3 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | 1,3-Dichloropropane | 1.1 U | 1.1 | 5.3 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | 1,4-Dichlorobenzene | 1.1 U | 1.1 | 5.3 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | 2,2-Dichloropropane | 2.1 U | 2.1 | 5.3 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | 2-Butanone (MEK) | 5.3 U | 5.3 | 21 | 20 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | 2-Chloro-1,1,1-trifluoroethane | 2.1 U | 2.1 | 11 | 10 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | 2-Chloroethyl vinyl ether | 2.1 U | 2.1 | 11 | 10 | µg/kg | | N |

APPENDIX D-1

**Test Stand Biovent Analytical Data**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | FSP SL | Units | FSP Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1277 | BVBS1277S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | 2-Chlorotoluene | 1.1 U | 1.1 | 5.3 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | 2-Hexanone | 5.3 U | 5.3 | 11 | 10 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | 4-Chlorotoluene | 1.1 U | 1.1 | 11 | 10 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | 4-Methyl-2-pentanone (MIBK) | 5.3 U | 5.3 | 11 | 10 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | Acetone | 5.3 U | 5.3 | 21 | 20 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | Benzene | 1.1 U | 1.1 | 5.3 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | Bromobenzene | 1.1 U | 1.1 | 5.3 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | Bromochloromethane | 1.1 U | 1.1 | 5.3 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | Bromodichloromethane | 1.1 U | 1.1 | 5.3 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | Bromoform | 2.1 U | 2.1 | 5.3 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | Bromomethane | 2.1 U | 2.1 | 5.3 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | Carbon tetrachloride | 1.1 U | 1.1 | 5.3 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | Chlorobenzene | 1.1 U | 1.1 | 5.3 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | Chloroethane | 2.1 U | 2.1 | 5.3 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | Chloromethane | 2.1 U | 2.1 | 5.3 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | Chlorotrifluoroethylene | 2.1 U | 2.1 | 11 | 10 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | cis-1,2-Dichloroethene | 1.1 U | 1.1 | 5.3 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | cis-1,3-Dichloropropene | 1.1 U | 1.1 | 5.3 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | Dibromochloromethane | 1.1 U | 1.1 | 5.3 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | Dibromomethane | 1.1 U | 1.1 | 5.3 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | Dichlorodifluoromethane | 2.1 U | 2.1 | 5.3 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | Ethylbenzene | 1.1 U | 1.1 | 5.3 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | Hexachlorobutadiene | 2.1 U | 2.1 | 5.3 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | Isopropylbenzene | 1.1 U | 1.1 | 5.3 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | m,p-Xylenes | 2.1 U | 2.1 | 5.3 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | Methylene chloride | 2.1 U | 2.1 | 11 | 10 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | Methyl-tert-butyl Ether (MTBE) | 1.1 U | 1.1 | 5.3 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | n-butylbenzene | 1.1 U | 1.1 | 5.3 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | n-Propylbenzene | 1.1 U | 1.1 | 5.3 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | o-Xylene | 1.1 U | 1.1 | 5.3 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | p-Isopropyltoluene | 1.1 U | 1.1 | 5.3 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | sec-Butylbenzene | 1.1 U | 1.1 | 5.3 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | Styrene | 1.1 U | 1.1 | 5.3 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | tert-Butylbenzene | 1.1 U | 1.1 | 5.3 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | Tetrachloroethene | 1.1 U | 1.1 | 5.3 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | Toluene | 1.1 U | 1.1 | 5.3 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | trans-1,2-Dichloroethene | 1.1 U | 1.1 | 5.3 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | trans-1,3-Dichloropropene | 1.1 U | 1.1 | 5.3 | 5 | µg/kg | | N |

APPENDIX D-1

**Test Stand Biovent Analytical Data**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | FSP SL | Units | FSP Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1277 | BVBS1277S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | Trichloroethene | 1.1 J | 1.1 | 5.3 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | Trichlorofluoromethane | 2.1 U | 2.1 | 5.3 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | Trichloromethane (Chloroform) | 1.1 U | 1.1 | 5.3 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | Vinyl chloride | 2.1 U | 2.1 | 5.3 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S002 | N | 16 Jul 2014 | 5 - 6 | SW9045D | GENCHEM | pH | 8.1 = | | | | PH UNITS | | NC |
| SO | BVBS1277 | BVBS1277S002 | N | 16 Jul 2014 | 5 - 6 | Walkley-Black | GENCHEM | Total Organic Carbon | 654 U | 654 | 654 | | mg/kg | | NC |
| SO | BVBS1277 | BVBS1277S002 | N | 16 Jul 2014 | 5 - 6 | M8015D | HC | Diesel Range Organics (C12-C14) | 5700 U | 2800 | 5700 | 5000 | µg/kg | X | N |
| SO | BVBS1277 | BVBS1277S002 | N | 16 Jul 2014 | 5 - 6 | M8015D | HC | Diesel Range Organics (C15-C20) | 5700 U | 2800 | 5700 | 5000 | µg/kg | X | N |
| SO | BVBS1277 | BVBS1277S002 | N | 16 Jul 2014 | 5 - 6 | M8015D | HC | Diesel Range Organics (C21-C30) | 5700 U | 2800 | 5700 | 5000 | µg/kg | X | N |
| SO | BVBS1277 | BVBS1277S002 | N | 16 Jul 2014 | 5 - 6 | M8015D | HC | Diesel Range Organics (C8-C11) | 5700 U | 2800 | 5700 | 1000 | µg/kg | X | RL |
| SO | BVBS1277 | BVBS1277S002 | N | 16 Jul 2014 | 5 - 6 | SW8015B | HC | GRO (C6-C12) | 1100 U | 530 | 1100 | 1000 | µg/kg | X | N |
| SO | BVBS1277 | BVBS1277S002 | N | 16 Jul 2014 | 5 - 6 | M8015D | HC | ORO (C31-C40) | 11000 U | 5700 | 11000 | 10000 | µg/kg | X | N |
| SO | BVBS1277 | BVBS1277S002 | N | 16 Jul 2014 | 5 - 6 | M8015D | HC | TOTAL EFH(C8-C40) | 5700 U | 2800 | 5700 | 10000 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S002 | N | 16 Jul 2014 | 5 - 6 | SW8270C-SIM | PAH | 1-Methylnaphthalene | 34 U | 17 | 34 | 2.5 | µg/kg | X | RL |
| SO | BVBS1277 | BVBS1277S002 | N | 16 Jul 2014 | 5 - 6 | SW8270C-SIM | PAH | 2-Methylnaphthalene | 34 U | 17 | 34 | 2.5 | µg/kg | X | RL |
| SO | BVBS1277 | BVBS1277S002 | N | 16 Jul 2014 | 5 - 6 | SW8270C-SIM | PAH | Acenaphthene | 34 U | 17 | 34 | 2.5 | µg/kg | X | RL |
| SO | BVBS1277 | BVBS1277S002 | N | 16 Jul 2014 | 5 - 6 | SW8270C-SIM | PAH | Acenaphthylene | 34 U | 17 | 34 | 2.5 | µg/kg | X | RL |
| SO | BVBS1277 | BVBS1277S002 | N | 16 Jul 2014 | 5 - 6 | SW8270C-SIM | PAH | Anthracene | 34 U | 17 | 34 | 2.5 | µg/kg | X | RL |
| SO | BVBS1277 | BVBS1277S002 | N | 16 Jul 2014 | 5 - 6 | SW8270C-SIM | PAH | Benzo(a)anthracene | 34 U | 17 | 34 | | µg/kg | | NC |
| SO | BVBS1277 | BVBS1277S002 | N | 16 Jul 2014 | 5 - 6 | SW8270C-SIM | PAH | Benzo(a)pyrene | 34 U | 17 | 34 | | µg/kg | | NC |
| SO | BVBS1277 | BVBS1277S002 | N | 16 Jul 2014 | 5 - 6 | SW8270C-SIM | PAH | Benzo(b)fluoranthene | 34 U | 17 | 34 | | µg/kg | | NC |
| SO | BVBS1277 | BVBS1277S002 | N | 16 Jul 2014 | 5 - 6 | SW8270C-SIM | PAH | Benzo(ghi)perylene | 34 U | 17 | 34 | 2.5 | µg/kg | X | RL |
| SO | BVBS1277 | BVBS1277S002 | N | 16 Jul 2014 | 5 - 6 | SW8270C-SIM | PAH | Benzo(k)fluoranthene | 34 U | 17 | 34 | | µg/kg | | NC |
| SO | BVBS1277 | BVBS1277S002 | N | 16 Jul 2014 | 5 - 6 | SW8270C-SIM | PAH | Chrysene | 34 U | 17 | 34 | | µg/kg | | NC |
| SO | BVBS1277 | BVBS1277S002 | N | 16 Jul 2014 | 5 - 6 | SW8270C-SIM | PAH | Dibenzo(a,h)anthracene | 34 U | 17 | 34 | | µg/kg | | NC |
| SO | BVBS1277 | BVBS1277S002 | N | 16 Jul 2014 | 5 - 6 | SW8270C-SIM | PAH | Fluoranthene | 34 U | 17 | 34 | 5.2 | µg/kg | X | RL |
| SO | BVBS1277 | BVBS1277S002 | N | 16 Jul 2014 | 5 - 6 | SW8270C-SIM | PAH | Fluorene | 34 U | 17 | 34 | 3.8 | µg/kg | X | RL |
| SO | BVBS1277 | BVBS1277S002 | N | 16 Jul 2014 | 5 - 6 | SW8270C-SIM | PAH | Indeno(1,2,3-cd)pyrene | 34 U | 17 | 34 | | µg/kg | | NC |
| SO | BVBS1277 | BVBS1277S002 | N | 16 Jul 2014 | 5 - 6 | SW8270C-SIM | PAH | Naphthalene | 34 U | 17 | 34 | 3.6 | µg/kg | X | RL |
| SO | BVBS1277 | BVBS1277S002 | N | 16 Jul 2014 | 5 - 6 | SW8270C-SIM | PAH | PAHTEQM | 0 U | | | 4.47 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S002 | N | 16 Jul 2014 | 5 - 6 | SW8270C-SIM | PAH | Phenanthrene | 34 U | 17 | 34 | 3.9 | µg/kg | X | RL |
| SO | BVBS1277 | BVBS1277S002 | N | 16 Jul 2014 | 5 - 6 | SW8270C-SIM | PAH | Pyrene | 34 U | 17 | 34 | 5.6 | µg/kg | X | RL |
| SO | BVBS1277 | BVBS1277S002 | N | 16 Jul 2014 | 5 - 6 | SW8270C-SIM | PHTH | Bis(2-ethylhexyl)phthalate | 68 U | 34 | 68 | 61 | µg/kg | X | N |
| SO | BVBS1277 | BVBS1277S002 | N | 16 Jul 2014 | 5 - 6 | SW8270C-SIM | PHTH | Butyl benzyl phthalate | 68 U | 34 | 68 | 100 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S002 | N | 16 Jul 2014 | 5 - 6 | SW8270C-SIM | PHTH | Diethyl phthalate | 68 U | 34 | 68 | 27 | µg/kg | X | RL |
| SO | BVBS1277 | BVBS1277S002 | N | 16 Jul 2014 | 5 - 6 | SW8270C-SIM | PHTH | Dimethyl phthalate | 68 U | 34 | 68 | 27 | µg/kg | X | RL |
| SO | BVBS1277 | BVBS1277S002 | N | 16 Jul 2014 | 5 - 6 | SW8270C-SIM | PHTH | Di-n-butyl phthalate | 68 U | 34 | 68 | 27 | µg/kg | X | RL |
| SO | BVBS1277 | BVBS1277S002 | N | 16 Jul 2014 | 5 - 6 | SW8270C-SIM | PHTH | Di-n-octyl phthalate | 68 U | 34 | 68 | 27 | µg/kg | X | RL |

APPENDIX D-1

**Test Stand Biovent Analytical Data**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | FSP SL | Units | FSP Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1277 | BVBS1277S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | SVOC | Diisopropyl ether | 1.1 U | 1.1 | 11 | 10 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S002 | N | 16 Jul 2014 | 5 - 6 | SW8270C-SIM | SVOC | n-Nitrosodimethylamine | 68 U | 34 | 68 | 10 | µg/kg | X | RL |
| SO | BVBS1277 | BVBS1277S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | SVOC | tert-Amyl methyl ether | 1.1 U | 1.1 | 5.3 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | SVOC | tert-Butyl alcohol | 11 U | 11 | 53 | 50 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | SVOC | tert-Butyl ethyl ether | 1.1 U | 1.1 | 5.3 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | 1,1,1,2-Tetrachloroethane | 1.1 U | 1.1 | 5.3 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | 1,1,1-Trichloroethane | 1.1 U | 1.1 | 5.3 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | 1,1,2,2-Tetrachloroethane | 1.1 U | 1.1 | 5.3 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | 1,1,2-Trichloro-1,2,2-trifluoroethane | 2.1 U | 2.1 | 5.3 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | 1,1,2-Trichloroethane | 1.1 U | 1.1 | 5.3 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | 1,1-Dichloroethane | 1.1 U | 1.1 | 5.3 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | 1,1-Dichloroethene | 1.1 U | 1.1 | 5.3 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | 1,1-Dichloropropene | 1.1 U | 1.1 | 5.3 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | 1,2,3-Trichlorobenzene | 2.1 U | 2.1 | 5.3 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | 1,2,3-Trichloropropane | 2.1 U | 2.1 | 5.3 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | 1,2,4-Trichlorobenzene | 2.1 U | 2.1 | 5.3 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | 1,2,4-Trimethylbenzene | 1.1 U | 1.1 | 5.3 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | 1,2-Dibromo-3-chloropropane | 2.1 U | 2.1 | 11 | 10 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | 1,2-Dibromoethane (EDB) | 1.1 U | 1.1 | 5.3 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | 1,2-Dichlorobenzene | 1.1 U | 1.1 | 5.3 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | 1,2-Dichloroethane | 1.1 U | 1.1 | 5.3 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | 1,2-Dichloropropane | 1.1 U | 1.1 | 5.3 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | 1,3,5-Trimethylbenzene | 1.1 U | 1.1 | 5.3 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | 1,3-Dichlorobenzene | 1.1 U | 1.1 | 5.3 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | 1,3-Dichloropropane | 1.1 U | 1.1 | 5.3 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | 1,4-Dichlorobenzene | 1.1 U | 1.1 | 5.3 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | 2,2-Dichloropropane | 2.1 U | 2.1 | 5.3 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | 2-Butanone (MEK) | 5.3 U | 5.3 | 21 | 20 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | 2-Chloro-1,1,1-trifluoroethane | 2.1 U | 2.1 | 11 | 10 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | 2-Chloroethyl vinyl ether | 2.1 U | 2.1 | 11 | 10 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | 2-Chlorotoluene | 1.1 U | 1.1 | 5.3 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | 2-Hexanone | 5.3 U | 5.3 | 11 | 10 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | 4-Chlorotoluene | 1.1 U | 1.1 | 11 | 10 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | 4-Methyl-2-pentanone (MIBK) | 5.3 U | 5.3 | 11 | 10 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | Acetone | 5.3 U | 5.3 | 21 | 20 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | Benzene | 1.1 U | 1.1 | 5.3 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | Bromobenzene | 1.1 U | 1.1 | 5.3 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | Bromochloromethane | 1.1 U | 1.1 | 5.3 | 5 | µg/kg | | N |

APPENDIX D-1

**Test Stand Biovent Analytical Data**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | FSP SL | Units | FSP Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1277 | BVBS1277S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | Bromodichloromethane | 1.1 U | 1.1 | 5.3 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | Bromoform | 2.1 U | 2.1 | 5.3 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | Bromomethane | 2.1 U | 2.1 | 5.3 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | Carbon tetrachloride | 1.1 U | 1.1 | 5.3 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | Chlorobenzene | 1.1 U | 1.1 | 5.3 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | Chloroethane | 2.1 U | 2.1 | 5.3 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | Chloromethane | 2.1 U | 2.1 | 5.3 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | Chlorotrifluoroethylene | 2.1 U | 2.1 | 11 | 10 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | cis-1,2-Dichloroethene | 1.1 U | 1.1 | 5.3 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | cis-1,3-Dichloropropene | 1.1 U | 1.1 | 5.3 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | Dibromochloromethane | 1.1 U | 1.1 | 5.3 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | Dibromomethane | 1.1 U | 1.1 | 5.3 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | Dichlorodifluoromethane | 2.1 U | 2.1 | 5.3 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | Ethylbenzene | 1.1 U | 1.1 | 5.3 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | Hexachlorobutadiene | 2.1 U | 2.1 | 5.3 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | Isopropylbenzene | 1.1 U | 1.1 | 5.3 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | m,p-Xylenes | 2.1 U | 2.1 | 5.3 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | Methylene chloride | 2.2 J | 2.1 | 11 | 10 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | Methyl-tert-butyl Ether (MTBE) | 1.1 U | 1.1 | 5.3 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | n-butylbenzene | 1.1 U | 1.1 | 5.3 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | n-Propylbenzene | 1.1 U | 1.1 | 5.3 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | o-Xylene | 1.1 U | 1.1 | 5.3 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | p-Isopropyltoluene | 1.1 U | 1.1 | 5.3 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | sec-Butylbenzene | 1.1 U | 1.1 | 5.3 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | Styrene | 1.1 U | 1.1 | 5.3 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | tert-Butylbenzene | 1.1 U | 1.1 | 5.3 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | Tetrachloroethene | 1.1 U | 1.1 | 5.3 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | Toluene | 1.1 U | 1.1 | 5.3 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | trans-1,2-Dichloroethene | 1.1 U | 1.1 | 5.3 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | trans-1,3-Dichloropropene | 1.1 U | 1.1 | 5.3 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | Trichloroethene | 1.1 U | 1.1 | 5.3 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | Trichlorofluoromethane | 2.1 U | 2.1 | 5.3 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | Trichloromethane (Chloroform) | 1.1 U | 1.1 | 5.3 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | Vinyl chloride | 2.1 U | 2.1 | 5.3 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S003 | N | 11 Sep 2014 | 2 - 3 | SW9045D | GENCHEM | pH | 8.43 = | | | | PH UNITS | | NC |
| SO | BVBS1277 | BVBS1277S003 | N | 11 Sep 2014 | 2 - 3 | Walkley-Black | GENCHEM | Total Organic Carbon | 630 U | 630 | 630 | | mg/kg | | NC |
| SO | BVBS1277 | BVBS1277S003 | N | 11 Sep 2014 | 2 - 3 | M8015D | HC | Diesel Range Organics (C12-C14) | 5300 U | 2600 | 5300 | 5000 | µg/kg | X | N |
| SO | BVBS1277 | BVBS1277S003 | N | 11 Sep 2014 | 2 - 3 | M8015D | HC | Diesel Range Organics (C15-C20) | 5300 U | 2600 | 5300 | 5000 | µg/kg | X | N |

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**Test Stand Biovent Analytical Data**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | FSP SL | Units | FSP Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1277 | BVBS1277S003 | N | 11 Sep 2014 | 2 - 3 | M8015D | HC | Diesel Range Organics (C21-C30) | 5300 U | 2600 | 5300 | 5000 | µg/kg | X | N |
| SO | BVBS1277 | BVBS1277S003 | N | 11 Sep 2014 | 2 - 3 | M8015D | HC | Diesel Range Organics (C8-C11) | 5300 U | 2600 | 5300 | 1000 | µg/kg | X | RL |
| SO | BVBS1277 | BVBS1277S003 | N | 11 Sep 2014 | 2 - 3 | SW8015B | HC | GRO (C6-C12) | 1000 U | 500 | 1000 | 1000 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S003 | N | 11 Sep 2014 | 2 - 3 | M8015D | HC | ORO (C31-C40) | 11000 U | 5300 | 11000 | 10000 | µg/kg | X | N |
| SO | BVBS1277 | BVBS1277S003 | N | 11 Sep 2014 | 2 - 3 | M8015D | HC | TOTAL EFH(C8-C40) | 5300 U | 2600 | 5300 | 10000 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S003 | N | 11 Sep 2014 | 2 - 3 | SW8270C-SIM | PAH | 1-Methylnaphthalene | 11 U | 5.3 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1277 | BVBS1277S003 | N | 11 Sep 2014 | 2 - 3 | SW8270C-SIM | PAH | 2-Methylnaphthalene | 11 U | 5.3 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1277 | BVBS1277S003 | N | 11 Sep 2014 | 2 - 3 | SW8270C-SIM | PAH | Acenaphthene | 11 U | 5.3 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1277 | BVBS1277S003 | N | 11 Sep 2014 | 2 - 3 | SW8270C-SIM | PAH | Acenaphthylene | 11 U | 5.3 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1277 | BVBS1277S003 | N | 11 Sep 2014 | 2 - 3 | SW8270C-SIM | PAH | Anthracene | 11 U | 5.3 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1277 | BVBS1277S003 | N | 11 Sep 2014 | 2 - 3 | SW8270C-SIM | PAH | Benzo(a)anthracene | 11 U | 5.3 | 11 | | µg/kg | | NC |
| SO | BVBS1277 | BVBS1277S003 | N | 11 Sep 2014 | 2 - 3 | SW8270C-SIM | PAH | Benzo(a)pyrene | 11 U | 5.3 | 11 | | µg/kg | | NC |
| SO | BVBS1277 | BVBS1277S003 | N | 11 Sep 2014 | 2 - 3 | SW8270C-SIM | PAH | Benzo(b)fluoranthene | 11 U | 5.3 | 11 | | µg/kg | | NC |
| SO | BVBS1277 | BVBS1277S003 | N | 11 Sep 2014 | 2 - 3 | SW8270C-SIM | PAH | Benzo(ghi)perylene | 11 U | 5.3 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1277 | BVBS1277S003 | N | 11 Sep 2014 | 2 - 3 | SW8270C-SIM | PAH | Benzo(k)fluoranthene | 11 U | 5.3 | 11 | | µg/kg | | NC |
| SO | BVBS1277 | BVBS1277S003 | N | 11 Sep 2014 | 2 - 3 | SW8270C-SIM | PAH | Chrysene | 11 U | 5.3 | 11 | | µg/kg | | NC |
| SO | BVBS1277 | BVBS1277S003 | N | 11 Sep 2014 | 2 - 3 | SW8270C-SIM | PAH | Dibenzo(a,h)anthracene | 11 U | 5.3 | 11 | | µg/kg | | NC |
| SO | BVBS1277 | BVBS1277S003 | N | 11 Sep 2014 | 2 - 3 | SW8270C-SIM | PAH | Fluoranthene | 11 U | 5.3 | 11 | 5.2 | µg/kg | X | RL |
| SO | BVBS1277 | BVBS1277S003 | N | 11 Sep 2014 | 2 - 3 | SW8270C-SIM | PAH | Fluorene | 11 U | 5.3 | 11 | 3.8 | µg/kg | X | RL |
| SO | BVBS1277 | BVBS1277S003 | N | 11 Sep 2014 | 2 - 3 | SW8270C-SIM | PAH | Indeno(1,2,3-cd)pyrene | 11 U | 5.3 | 11 | | µg/kg | | NC |
| SO | BVBS1277 | BVBS1277S003 | N | 11 Sep 2014 | 2 - 3 | SW8270C-SIM | PAH | Naphthalene | 11 U | 5.3 | 11 | 3.6 | µg/kg | X | RL |
| SO | BVBS1277 | BVBS1277S003 | N | 11 Sep 2014 | 2 - 3 | SW8270C-SIM | PAH | PAHTEQM | 0 U | | | 4.47 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S003 | N | 11 Sep 2014 | 2 - 3 | SW8270C-SIM | PAH | Phenanthrene | 11 U | 5.3 | 11 | 3.9 | µg/kg | X | RL |
| SO | BVBS1277 | BVBS1277S003 | N | 11 Sep 2014 | 2 - 3 | SW8270C-SIM | PAH | Pyrene | 11 U | 5.3 | 11 | 5.6 | µg/kg | X | N |
| SO | BVBS1277 | BVBS1277S003 | N | 11 Sep 2014 | 2 - 3 | SW8270C-SIM | PHTH | Bis(2-ethylhexyl)phthalate | 21 U | 11 | 21 | 61 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S003 | N | 11 Sep 2014 | 2 - 3 | SW8270C-SIM | PHTH | Butyl benzyl phthalate | 21 U | 11 | 21 | 100 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S003 | N | 11 Sep 2014 | 2 - 3 | SW8270C-SIM | PHTH | Diethyl phthalate | 21 U | 11 | 21 | 27 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S003 | N | 11 Sep 2014 | 2 - 3 | SW8270C-SIM | PHTH | Dimethyl phthalate | 21 U | 11 | 21 | 27 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S003 | N | 11 Sep 2014 | 2 - 3 | SW8270C-SIM | PHTH | Di-n-butyl phthalate | 21 U | 11 | 21 | 27 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S003 | N | 11 Sep 2014 | 2 - 3 | SW8270C-SIM | PHTH | Di-n-octyl phthalate | 21 U | 11 | 21 | 27 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | SVOC | Diisopropyl ether | 1.1 U | 1.1 | 11 | 10 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S003 | N | 11 Sep 2014 | 2 - 3 | SW8270C-SIM | SVOC | n-Nitrosodimethylamine | 21 U | 11 | 21 | 10 | µg/kg | X | RL |
| SO | BVBS1277 | BVBS1277S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | SVOC | tert-Amyl methyl ether | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | SVOC | tert-Butyl alcohol | 11 U | 11 | 55 | 50 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | SVOC | tert-Butyl ethyl ether | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | 1,1,1,2-Tetrachloroethane | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | 1,1,1-Trichloroethane | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | 1,1,2,2-Tetrachloroethane | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |

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**Test Stand Biovent Analytical Data**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | FSP SL | Units | FSP Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1277 | BVBS1277S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | 1,1,2-Trichloro-1,2,2-trifluoroethane | 2.2 U | 2.2 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | 1,1,2-Trichloroethane | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | 1,1-Dichloroethane | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | 1,1-Dichloroethene | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | 1,1-Dichloropropene | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | 1,2,3-Trichlorobenzene | 2.2 U | 2.2 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | 1,2,3-Trichloropropane | 2.2 U | 2.2 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | 1,2,4-Trichlorobenzene | 2.2 U | 2.2 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | 1,2,4-Trimethylbenzene | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | 1,2-Dibromo-3-chloropropane | 2.2 U | 2.2 | 11 | 10 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | 1,2-Dibromoethane (EDB) | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | 1,2-Dichlorobenzene | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | 1,2-Dichloroethane | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | 1,2-Dichloropropane | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | 1,3,5-Trimethylbenzene | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | 1,3-Dichlorobenzene | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | 1,3-Dichloropropane | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | 1,4-Dichlorobenzene | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | 2,2-Dichloropropane | 2.2 U | 2.2 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | 2-Butanone (MEK) | 5.5 U | 5.5 | 22 | 20 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | 2-Chloro-1,1,1-trifluoroethane | 2.2 U | 2.2 | 11 | 10 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | 2-Chloroethyl vinyl ether | 2.2 U | 2.2 | 11 | 10 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | 2-Chlorotoluene | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | 2-Hexanone | 5.5 U | 5.5 | 11 | 10 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | 4-Chlorotoluene | 1.1 U | 1.1 | 11 | 10 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | 4-Methyl-2-pentanone (MIBK) | 5.5 U | 5.5 | 11 | 10 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | Acetone | 5.5 U | 5.5 | 22 | 20 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | Benzene | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | Bromobenzene | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | Bromochloromethane | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | Bromodichloromethane | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | Bromoform | 2.2 U | 2.2 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | Bromomethane | 2.2 U | 2.2 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | Carbon tetrachloride | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | Chlorobenzene | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | Chloroethane | 2.2 U | 2.2 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | Chloromethane | 2.2 U | 2.2 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | Chlorotrifluoroethylene | 2.2 U | 2.2 | 11 | 10 | µg/kg | | N |

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**Test Stand Biovent Analytical Data**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | FSP SL | Units | FSP Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1277 | BVBS1277S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | cis-1,2-Dichloroethene | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | cis-1,3-Dichloropropene | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | Dibromochloromethane | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | Dibromomethane | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | Dichlorodifluoromethane | 2.2 U | 2.2 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | Ethylbenzene | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | Hexachlorobutadiene | 2.2 U | 2.2 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | Isopropylbenzene | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | m,p-Xylenes | 2.2 U | 2.2 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | Methylene chloride | 2.2 U | 2.2 | 11 | 10 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | Methyl-tert-butyl Ether (MTBE) | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | n-butylbenzene | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | n-Propylbenzene | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | o-Xylene | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | p-Isopropyltoluene | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | sec-Butylbenzene | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | Styrene | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | tert-Butylbenzene | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | Tetrachloroethene | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | Toluene | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | trans-1,2-Dichloroethene | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | trans-1,3-Dichloropropene | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | Trichloroethene | 7.2 = | 1.1 | 5.5 | 5 | µg/kg | X | Y |
| SO | BVBS1277 | BVBS1277S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | Trichlorofluoromethane | 2.2 U | 2.2 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | Trichloromethane (Chloroform) | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | Vinyl chloride | 2.2 U | 2.2 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S004 | N | 11 Sep 2014 | 4.5 - 5.5 | SW9045D | GENCHEM | pH | 8.64 = | | | | PH UNITS | | NC |
| SO | BVBS1277 | BVBS1277S004 | N | 11 Sep 2014 | 4.5 - 5.5 | Walkley-Black | GENCHEM | Total Organic Carbon | 618 U | 618 | 618 | | mg/kg | | NC |
| SO | BVBS1277 | BVBS1277S004 | N | 11 Sep 2014 | 4.5 - 5.5 | M8015D | HC | Diesel Range Organics (C12-C14) | 5300 U | 2600 | 5300 | 5000 | µg/kg | X | N |
| SO | BVBS1277 | BVBS1277S004 | N | 11 Sep 2014 | 4.5 - 5.5 | M8015D | HC | Diesel Range Organics (C15-C20) | 5300 U | 2600 | 5300 | 5000 | µg/kg | X | N |
| SO | BVBS1277 | BVBS1277S004 | N | 11 Sep 2014 | 4.5 - 5.5 | M8015D | HC | Diesel Range Organics (C21-C30) | 5300 U | 2600 | 5300 | 5000 | µg/kg | X | N |
| SO | BVBS1277 | BVBS1277S004 | N | 11 Sep 2014 | 4.5 - 5.5 | M8015D | HC | Diesel Range Organics (C8-C11) | 5300 U | 2600 | 5300 | 1000 | µg/kg | X | RL |
| SO | BVBS1277 | BVBS1277S004 | N | 11 Sep 2014 | 4.5 - 5.5 | SW8015B | HC | GRO (C6-C12) | 1100 U | 550 | 1100 | 1000 | µg/kg | X | N |
| SO | BVBS1277 | BVBS1277S004 | N | 11 Sep 2014 | 4.5 - 5.5 | M8015D | HC | ORO (C31-C40) | 11000 U | 5300 | 11000 | 10000 | µg/kg | X | N |
| SO | BVBS1277 | BVBS1277S004 | N | 11 Sep 2014 | 4.5 - 5.5 | M8015D | HC | TOTAL EFH(C8-C40) | 5300 U | 2600 | 5300 | 10000 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S004 | N | 11 Sep 2014 | 4.5 - 5.5 | SW8270C-SIM | PAH | 1-Methylnaphthalene | 11 U | 5.3 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1277 | BVBS1277S004 | N | 11 Sep 2014 | 4.5 - 5.5 | SW8270C-SIM | PAH | 2-Methylnaphthalene | 11 U | 5.3 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1277 | BVBS1277S004 | N | 11 Sep 2014 | 4.5 - 5.5 | SW8270C-SIM | PAH | Acenaphthene | 11 U | 5.3 | 11 | 2.5 | µg/kg | X | RL |

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**Test Stand Biovent Analytical Data**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | FSP SL | Units | FSP Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1277 | BVBS1277S004 | N | 11 Sep 2014 | 4.5 - 5.5 | SW8270C-SIM | PAH | Acenaphthylene | 11 U | 5.3 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1277 | BVBS1277S004 | N | 11 Sep 2014 | 4.5 - 5.5 | SW8270C-SIM | PAH | Anthracene | 11 U | 5.3 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1277 | BVBS1277S004 | N | 11 Sep 2014 | 4.5 - 5.5 | SW8270C-SIM | PAH | Benzo(a)anthracene | 11 U | 5.3 | 11 | | µg/kg | | NC |
| SO | BVBS1277 | BVBS1277S004 | N | 11 Sep 2014 | 4.5 - 5.5 | SW8270C-SIM | PAH | Benzo(a)pyrene | 11 U | 5.3 | 11 | | µg/kg | | NC |
| SO | BVBS1277 | BVBS1277S004 | N | 11 Sep 2014 | 4.5 - 5.5 | SW8270C-SIM | PAH | Benzo(b)fluoranthene | 11 U | 5.3 | 11 | | µg/kg | | NC |
| SO | BVBS1277 | BVBS1277S004 | N | 11 Sep 2014 | 4.5 - 5.5 | SW8270C-SIM | PAH | Benzo(ghi)perylene | 11 U | 5.3 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1277 | BVBS1277S004 | N | 11 Sep 2014 | 4.5 - 5.5 | SW8270C-SIM | PAH | Benzo(k)fluoranthene | 11 U | 5.3 | 11 | | µg/kg | | NC |
| SO | BVBS1277 | BVBS1277S004 | N | 11 Sep 2014 | 4.5 - 5.5 | SW8270C-SIM | PAH | Chrysene | 11 U | 5.3 | 11 | | µg/kg | | NC |
| SO | BVBS1277 | BVBS1277S004 | N | 11 Sep 2014 | 4.5 - 5.5 | SW8270C-SIM | PAH | Dibenzo(a,h)anthracene | 11 U | 5.3 | 11 | | µg/kg | | NC |
| SO | BVBS1277 | BVBS1277S004 | N | 11 Sep 2014 | 4.5 - 5.5 | SW8270C-SIM | PAH | Fluoranthene | 11 U | 5.3 | 11 | 5.2 | µg/kg | X | RL |
| SO | BVBS1277 | BVBS1277S004 | N | 11 Sep 2014 | 4.5 - 5.5 | SW8270C-SIM | PAH | Fluorene | 11 U | 5.3 | 11 | 3.8 | µg/kg | X | RL |
| SO | BVBS1277 | BVBS1277S004 | N | 11 Sep 2014 | 4.5 - 5.5 | SW8270C-SIM | PAH | Indeno(1,2,3-cd)pyrene | 11 U | 5.3 | 11 | | µg/kg | | NC |
| SO | BVBS1277 | BVBS1277S004 | N | 11 Sep 2014 | 4.5 - 5.5 | SW8270C-SIM | PAH | Naphthalene | 11 U | 5.3 | 11 | 3.6 | µg/kg | X | RL |
| SO | BVBS1277 | BVBS1277S004 | N | 11 Sep 2014 | 4.5 - 5.5 | SW8270C-SIM | PAH | PAHTEQM | 0 U | | | 4.47 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S004 | N | 11 Sep 2014 | 4.5 - 5.5 | SW8270C-SIM | PAH | Phenanthrene | 11 U | 5.3 | 11 | 3.9 | µg/kg | X | RL |
| SO | BVBS1277 | BVBS1277S004 | N | 11 Sep 2014 | 4.5 - 5.5 | SW8270C-SIM | PAH | Pyrene | 11 U | 5.3 | 11 | 5.6 | µg/kg | X | N |
| SO | BVBS1277 | BVBS1277S004 | N | 11 Sep 2014 | 4.5 - 5.5 | SW8270C-SIM | PHTH | Bis(2-ethylhexyl)phthalate | 21 U | 11 | 21 | 61 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S004 | N | 11 Sep 2014 | 4.5 - 5.5 | SW8270C-SIM | PHTH | Butyl benzyl phthalate | 21 U | 11 | 21 | 100 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S004 | N | 11 Sep 2014 | 4.5 - 5.5 | SW8270C-SIM | PHTH | Diethyl phthalate | 21 U | 11 | 21 | 27 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S004 | N | 11 Sep 2014 | 4.5 - 5.5 | SW8270C-SIM | PHTH | Dimethyl phthalate | 21 U | 11 | 21 | 27 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S004 | N | 11 Sep 2014 | 4.5 - 5.5 | SW8270C-SIM | PHTH | Di-n-butyl phthalate | 21 U | 11 | 21 | 27 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S004 | N | 11 Sep 2014 | 4.5 - 5.5 | SW8270C-SIM | PHTH | Di-n-octyl phthalate | 21 U | 11 | 21 | 27 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S004 | N | 11 Sep 2014 | 4.5 - 5.5 | SW8260B | SVOC | Diisopropyl ether | 1.1 U | 1.1 | 11 | 10 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S004 | N | 11 Sep 2014 | 4.5 - 5.5 | SW8270C-SIM | SVOC | n-Nitrosodimethylamine | 21 U | 11 | 21 | 10 | µg/kg | X | RL |
| SO | BVBS1277 | BVBS1277S004 | N | 11 Sep 2014 | 4.5 - 5.5 | SW8260B | SVOC | tert-Amyl methyl ether | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S004 | N | 11 Sep 2014 | 4.5 - 5.5 | SW8260B | SVOC | tert-Butyl alcohol | 11 U | 11 | 54 | 50 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S004 | N | 11 Sep 2014 | 4.5 - 5.5 | SW8260B | SVOC | tert-Butyl ethyl ether | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S004 | N | 11 Sep 2014 | 4.5 - 5.5 | SW8260B | VOC | 1,1,1,2-Tetrachloroethane | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S004 | N | 11 Sep 2014 | 4.5 - 5.5 | SW8260B | VOC | 1,1,1-Trichloroethane | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S004 | N | 11 Sep 2014 | 4.5 - 5.5 | SW8260B | VOC | 1,1,2,2-Tetrachloroethane | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S004 | N | 11 Sep 2014 | 4.5 - 5.5 | SW8260B | VOC | 1,1,2-Trichloro-1,2,2-trifluoroethane | 2.2 U | 2.2 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S004 | N | 11 Sep 2014 | 4.5 - 5.5 | SW8260B | VOC | 1,1,2-Trichloroethane | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S004 | N | 11 Sep 2014 | 4.5 - 5.5 | SW8260B | VOC | 1,1-Dichloroethane | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S004 | N | 11 Sep 2014 | 4.5 - 5.5 | SW8260B | VOC | 1,1-Dichloroethene | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S004 | N | 11 Sep 2014 | 4.5 - 5.5 | SW8260B | VOC | 1,1-Dichloropropene | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S004 | N | 11 Sep 2014 | 4.5 - 5.5 | SW8260B | VOC | 1,2,3-Trichlorobenzene | 2.2 U | 2.2 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S004 | N | 11 Sep 2014 | 4.5 - 5.5 | SW8260B | VOC | 1,2,3-Trichloropropane | 2.2 U | 2.2 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S004 | N | 11 Sep 2014 | 4.5 - 5.5 | SW8260B | VOC | 1,2,4-Trichlorobenzene | 2.2 U | 2.2 | 5.4 | 5 | µg/kg | | N |

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**Test Stand Biovent Analytical Data**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | FSP SL | Units | FSP Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1277 | BVBS1277S004 | N | 11 Sep 2014 | 4.5 - 5.5 | SW8260B | VOC | 1,2,4-Trimethylbenzene | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S004 | N | 11 Sep 2014 | 4.5 - 5.5 | SW8260B | VOC | 1,2-Dibromo-3-chloropropane | 2.2 U | 2.2 | 11 | 10 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S004 | N | 11 Sep 2014 | 4.5 - 5.5 | SW8260B | VOC | 1,2-Dibromoethane (EDB) | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S004 | N | 11 Sep 2014 | 4.5 - 5.5 | SW8260B | VOC | 1,2-Dichlorobenzene | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S004 | N | 11 Sep 2014 | 4.5 - 5.5 | SW8260B | VOC | 1,2-Dichloroethane | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S004 | N | 11 Sep 2014 | 4.5 - 5.5 | SW8260B | VOC | 1,2-Dichloropropane | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S004 | N | 11 Sep 2014 | 4.5 - 5.5 | SW8260B | VOC | 1,3,5-Trimethylbenzene | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S004 | N | 11 Sep 2014 | 4.5 - 5.5 | SW8260B | VOC | 1,3-Dichlorobenzene | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S004 | N | 11 Sep 2014 | 4.5 - 5.5 | SW8260B | VOC | 1,3-Dichloropropane | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S004 | N | 11 Sep 2014 | 4.5 - 5.5 | SW8260B | VOC | 1,4-Dichlorobenzene | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S004 | N | 11 Sep 2014 | 4.5 - 5.5 | SW8260B | VOC | 2,2-Dichloropropane | 2.2 U | 2.2 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S004 | N | 11 Sep 2014 | 4.5 - 5.5 | SW8260B | VOC | 2-Butanone (MEK) | 5.4 U | 5.4 | 22 | 20 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S004 | N | 11 Sep 2014 | 4.5 - 5.5 | SW8260B | VOC | 2-Chloro-1,1,1-trifluoroethane | 2.2 U | 2.2 | 11 | 10 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S004 | N | 11 Sep 2014 | 4.5 - 5.5 | SW8260B | VOC | 2-Chloroethyl vinyl ether | 2.2 U | 2.2 | 11 | 10 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S004 | N | 11 Sep 2014 | 4.5 - 5.5 | SW8260B | VOC | 2-Chlorotoluene | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S004 | N | 11 Sep 2014 | 4.5 - 5.5 | SW8260B | VOC | 2-Hexanone | 5.4 U | 5.4 | 11 | 10 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S004 | N | 11 Sep 2014 | 4.5 - 5.5 | SW8260B | VOC | 4-Chlorotoluene | 1.1 U | 1.1 | 11 | 10 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S004 | N | 11 Sep 2014 | 4.5 - 5.5 | SW8260B | VOC | 4-Methyl-2-pentanone (MIBK) | 5.4 U | 5.4 | 11 | 10 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S004 | N | 11 Sep 2014 | 4.5 - 5.5 | SW8260B | VOC | Acetone | 5.4 U | 5.4 | 22 | 20 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S004 | N | 11 Sep 2014 | 4.5 - 5.5 | SW8260B | VOC | Benzene | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S004 | N | 11 Sep 2014 | 4.5 - 5.5 | SW8260B | VOC | Bromobenzene | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S004 | N | 11 Sep 2014 | 4.5 - 5.5 | SW8260B | VOC | Bromochloromethane | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S004 | N | 11 Sep 2014 | 4.5 - 5.5 | SW8260B | VOC | Bromodichloromethane | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S004 | N | 11 Sep 2014 | 4.5 - 5.5 | SW8260B | VOC | Bromoform | 2.2 U | 2.2 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S004 | N | 11 Sep 2014 | 4.5 - 5.5 | SW8260B | VOC | Bromomethane | 2.2 U | 2.2 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S004 | N | 11 Sep 2014 | 4.5 - 5.5 | SW8260B | VOC | Carbon tetrachloride | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S004 | N | 11 Sep 2014 | 4.5 - 5.5 | SW8260B | VOC | Chlorobenzene | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S004 | N | 11 Sep 2014 | 4.5 - 5.5 | SW8260B | VOC | Chloroethane | 2.2 U | 2.2 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S004 | N | 11 Sep 2014 | 4.5 - 5.5 | SW8260B | VOC | Chloromethane | 2.2 U | 2.2 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S004 | N | 11 Sep 2014 | 4.5 - 5.5 | SW8260B | VOC | Chlorotrifluoroethylene | 2.2 U | 2.2 | 11 | 10 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S004 | N | 11 Sep 2014 | 4.5 - 5.5 | SW8260B | VOC | cis-1,2-Dichloroethene | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S004 | N | 11 Sep 2014 | 4.5 - 5.5 | SW8260B | VOC | cis-1,3-Dichloropropene | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S004 | N | 11 Sep 2014 | 4.5 - 5.5 | SW8260B | VOC | Dibromochloromethane | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S004 | N | 11 Sep 2014 | 4.5 - 5.5 | SW8260B | VOC | Dibromomethane | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S004 | N | 11 Sep 2014 | 4.5 - 5.5 | SW8260B | VOC | Dichlorodifluoromethane | 2.2 U | 2.2 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S004 | N | 11 Sep 2014 | 4.5 - 5.5 | SW8260B | VOC | Ethylbenzene | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S004 | N | 11 Sep 2014 | 4.5 - 5.5 | SW8260B | VOC | Hexachlorobutadiene | 2.2 U | 2.2 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S004 | N | 11 Sep 2014 | 4.5 - 5.5 | SW8260B | VOC | Isopropylbenzene | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |

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**Test Stand Biovent Analytical Data**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | FSP SL | Units | FSP Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1277 | BVBS1277S004 | N | 11 Sep 2014 | 4.5 - 5.5 | SW8260B | VOC | m,p-Xylenes | 2.2 U | 2.2 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S004 | N | 11 Sep 2014 | 4.5 - 5.5 | SW8260B | VOC | Methylene chloride | 2.2 U | 2.2 | 11 | 10 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S004 | N | 11 Sep 2014 | 4.5 - 5.5 | SW8260B | VOC | Methyl-tert-butyl Ether (MTBE) | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S004 | N | 11 Sep 2014 | 4.5 - 5.5 | SW8260B | VOC | n-butylbenzene | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S004 | N | 11 Sep 2014 | 4.5 - 5.5 | SW8260B | VOC | n-Propylbenzene | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S004 | N | 11 Sep 2014 | 4.5 - 5.5 | SW8260B | VOC | o-Xylene | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S004 | N | 11 Sep 2014 | 4.5 - 5.5 | SW8260B | VOC | p-Isopropyltoluene | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S004 | N | 11 Sep 2014 | 4.5 - 5.5 | SW8260B | VOC | sec-Butylbenzene | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S004 | N | 11 Sep 2014 | 4.5 - 5.5 | SW8260B | VOC | Styrene | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S004 | N | 11 Sep 2014 | 4.5 - 5.5 | SW8260B | VOC | tert-Butylbenzene | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S004 | N | 11 Sep 2014 | 4.5 - 5.5 | SW8260B | VOC | Tetrachloroethene | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S004 | N | 11 Sep 2014 | 4.5 - 5.5 | SW8260B | VOC | Toluene | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S004 | N | 11 Sep 2014 | 4.5 - 5.5 | SW8260B | VOC | trans-1,2-Dichloroethene | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S004 | N | 11 Sep 2014 | 4.5 - 5.5 | SW8260B | VOC | trans-1,3-Dichloropropene | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S004 | N | 11 Sep 2014 | 4.5 - 5.5 | SW8260B | VOC | Trichloroethene | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S004 | N | 11 Sep 2014 | 4.5 - 5.5 | SW8260B | VOC | Trichlorofluoromethane | 2.2 U | 2.2 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S004 | N | 11 Sep 2014 | 4.5 - 5.5 | SW8260B | VOC | Trichloromethane (Chloroform) | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1277 | BVBS1277S004 | N | 11 Sep 2014 | 4.5 - 5.5 | SW8260B | VOC | Vinyl chloride | 2.2 U | 2.2 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S001 | N | 16 Jul 2014 | 2 - 3 | SW9045D | GENCHEM | pH | 7.25 = | | | | PH UNITS | | NC |
| SO | BVBS1278 | BVBS1278S001 | N | 16 Jul 2014 | 2 - 3 | Walkley-Black | GENCHEM | Total Organic Carbon | 629 U | 629 | 629 | | mg/kg | | NC |
| SO | BVBS1278 | BVBS1278S001 | N | 16 Jul 2014 | 2 - 3 | M8015D | HC | Diesel Range Organics (C12-C14) | 5400 U | 2700 | 5400 | 5000 | µg/kg | X | N |
| SO | BVBS1278 | BVBS1278S001 | N | 16 Jul 2014 | 2 - 3 | M8015D | HC | Diesel Range Organics (C15-C20) | 5400 U | 2700 | 5400 | 5000 | µg/kg | X | N |
| SO | BVBS1278 | BVBS1278S001 | N | 16 Jul 2014 | 2 - 3 | M8015D | HC | Diesel Range Organics (C21-C30) | 5400 U | 2700 | 5400 | 5000 | µg/kg | X | N |
| SO | BVBS1278 | BVBS1278S001 | N | 16 Jul 2014 | 2 - 3 | M8015D | HC | Diesel Range Organics (C8-C11) | 5400 U | 2700 | 5400 | 1000 | µg/kg | X | RL |
| SO | BVBS1278 | BVBS1278S001 | N | 16 Jul 2014 | 2 - 3 | SW8015B | HC | GRO (C6-C12) | 1100 U | 530 | 1100 | 1000 | µg/kg | X | N |
| SO | BVBS1278 | BVBS1278S001 | N | 16 Jul 2014 | 2 - 3 | M8015D | HC | ORO (C31-C40) | 11000 U | 5400 | 11000 | 10000 | µg/kg | X | N |
| SO | BVBS1278 | BVBS1278S001 | N | 16 Jul 2014 | 2 - 3 | M8015D | HC | TOTAL EFH(C8-C40) | 5400 U | 2700 | 5400 | 10000 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S001 | N | 16 Jul 2014 | 2 - 3 | SW8270C-SIM | PAH | 1-Methylnaphthalene | 11 U | 5.4 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1278 | BVBS1278S001 | N | 16 Jul 2014 | 2 - 3 | SW8270C-SIM | PAH | 2-Methylnaphthalene | 11 U | 5.4 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1278 | BVBS1278S001 | N | 16 Jul 2014 | 2 - 3 | SW8270C-SIM | PAH | Acenaphthene | 11 U | 5.4 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1278 | BVBS1278S001 | N | 16 Jul 2014 | 2 - 3 | SW8270C-SIM | PAH | Acenaphthylene | 11 U | 5.4 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1278 | BVBS1278S001 | N | 16 Jul 2014 | 2 - 3 | SW8270C-SIM | PAH | Anthracene | 11 U | 5.4 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1278 | BVBS1278S001 | N | 16 Jul 2014 | 2 - 3 | SW8270C-SIM | PAH | Benzo(a)anthracene | 11 U | 5.4 | 11 | | µg/kg | | NC |
| SO | BVBS1278 | BVBS1278S001 | N | 16 Jul 2014 | 2 - 3 | SW8270C-SIM | PAH | Benzo(a)pyrene | 11 U | 5.4 | 11 | | µg/kg | | NC |
| SO | BVBS1278 | BVBS1278S001 | N | 16 Jul 2014 | 2 - 3 | SW8270C-SIM | PAH | Benzo(b)fluoranthene | 11 U | 5.4 | 11 | | µg/kg | | NC |
| SO | BVBS1278 | BVBS1278S001 | N | 16 Jul 2014 | 2 - 3 | SW8270C-SIM | PAH | Benzo(ghi)perylene | 11 U | 5.4 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1278 | BVBS1278S001 | N | 16 Jul 2014 | 2 - 3 | SW8270C-SIM | PAH | Benzo(k)fluoranthene | 11 U | 5.4 | 11 | | µg/kg | | NC |
| SO | BVBS1278 | BVBS1278S001 | N | 16 Jul 2014 | 2 - 3 | SW8270C-SIM | PAH | Chrysene | 11 U | 5.4 | 11 | | µg/kg | | NC |

APPENDIX D-1

**Test Stand Biovent Analytical Data**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | FSP SL | Units | FSP Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1278 | BVBS1278S001 | N | 16 Jul 2014 | 2 - 3 | SW8270C-SIM | PAH | Dibenzo(a,h)anthracene | 11 U | 5.4 | 11 | | µg/kg | | NC |
| SO | BVBS1278 | BVBS1278S001 | N | 16 Jul 2014 | 2 - 3 | SW8270C-SIM | PAH | Fluoranthene | 11 U | 5.4 | 11 | 5.2 | µg/kg | X | RL |
| SO | BVBS1278 | BVBS1278S001 | N | 16 Jul 2014 | 2 - 3 | SW8270C-SIM | PAH | Fluorene | 11 U | 5.4 | 11 | 3.8 | µg/kg | X | RL |
| SO | BVBS1278 | BVBS1278S001 | N | 16 Jul 2014 | 2 - 3 | SW8270C-SIM | PAH | Indeno(1,2,3-cd)pyrene | 11 U | 5.4 | 11 | | µg/kg | | NC |
| SO | BVBS1278 | BVBS1278S001 | N | 16 Jul 2014 | 2 - 3 | SW8270C-SIM | PAH | Naphthalene | 11 U | 5.4 | 11 | 3.6 | µg/kg | X | RL |
| SO | BVBS1278 | BVBS1278S001 | N | 16 Jul 2014 | 2 - 3 | SW8270C-SIM | PAH | PAHTEQM | 0 U | | | 4.47 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S001 | N | 16 Jul 2014 | 2 - 3 | SW8270C-SIM | PAH | Phenanthrene | 11 U | 5.4 | 11 | 3.9 | µg/kg | X | RL |
| SO | BVBS1278 | BVBS1278S001 | N | 16 Jul 2014 | 2 - 3 | SW8270C-SIM | PAH | Pyrene | 11 U | 5.4 | 11 | 5.6 | µg/kg | X | N |
| SO | BVBS1278 | BVBS1278S001 | N | 16 Jul 2014 | 2 - 3 | SW8270C-SIM | PHTH | Bis(2-ethylhexyl)phthalate | 22 U | 11 | 22 | 61 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S001 | N | 16 Jul 2014 | 2 - 3 | SW8270C-SIM | PHTH | Butyl benzyl phthalate | 22 U | 11 | 22 | 100 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S001 | N | 16 Jul 2014 | 2 - 3 | SW8270C-SIM | PHTH | Diethyl phthalate | 22 U | 11 | 22 | 27 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S001 | N | 16 Jul 2014 | 2 - 3 | SW8270C-SIM | PHTH | Dimethyl phthalate | 22 U | 11 | 22 | 27 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S001 | N | 16 Jul 2014 | 2 - 3 | SW8270C-SIM | PHTH | Di-n-butyl phthalate | 22 U | 11 | 22 | 27 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S001 | N | 16 Jul 2014 | 2 - 3 | SW8270C-SIM | PHTH | Di-n-octyl phthalate | 22 U | 11 | 22 | 27 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | SVOC | Diisopropyl ether | 1.1 U | 1.1 | 11 | 10 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S001 | N | 16 Jul 2014 | 2 - 3 | SW8270C-SIM | SVOC | n-Nitrosodimethylamine | 22 U | 11 | 22 | 10 | µg/kg | X | RL |
| SO | BVBS1278 | BVBS1278S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | SVOC | tert-Amyl methyl ether | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | SVOC | tert-Butyl alcohol | 11 U | 11 | 54 | 50 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | SVOC | tert-Butyl ethyl ether | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | 1,1,1,2-Tetrachloroethane | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | 1,1,1-Trichloroethane | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | 1,1,2,2-Tetrachloroethane | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | 1,1,2-Trichloro-1,2,2-trifluoroethane | 2.2 U | 2.2 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | 1,1,2-Trichloroethane | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | 1,1-Dichloroethane | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | 1,1-Dichloroethene | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | 1,1-Dichloropropene | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | 1,2,3-Trichlorobenzene | 2.2 U | 2.2 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | 1,2,3-Trichloropropane | 2.2 U | 2.2 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | 1,2,4-Trichlorobenzene | 2.2 U | 2.2 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | 1,2,4-Trimethylbenzene | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | 1,2-Dibromo-3-chloropropane | 2.2 U | 2.2 | 11 | 10 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | 1,2-Dibromoethane (EDB) | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | 1,2-Dichlorobenzene | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | 1,2-Dichloroethane | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | 1,2-Dichloropropane | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | 1,3,5-Trimethylbenzene | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | 1,3-Dichlorobenzene | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |

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**Test Stand Biovent Analytical Data**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | FSP SL | Units | FSP Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1278 | BVBS1278S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | 1,3-Dichloropropane | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | 1,4-Dichlorobenzene | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | 2,2-Dichloropropane | 2.2 U | 2.2 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | 2-Butanone (MEK) | 5.4 U | 5.4 | 22 | 20 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | 2-Chloro-1,1,1-trifluoroethane | 2.2 U | 2.2 | 11 | 10 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | 2-Chloroethyl vinyl ether | 2.2 U | 2.2 | 11 | 10 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | 2-Chlorotoluene | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | 2-Hexanone | 5.4 U | 5.4 | 11 | 10 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | 4-Chlorotoluene | 1.1 U | 1.1 | 11 | 10 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | 4-Methyl-2-pentanone (MIBK) | 5.4 U | 5.4 | 11 | 10 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | Acetone | 5.4 U | 5.4 | 22 | 20 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | Benzene | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | Bromobenzene | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | Bromochloromethane | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | Bromodichloromethane | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | Bromoform | 2.2 U | 2.2 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | Bromomethane | 2.2 U | 2.2 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | Carbon tetrachloride | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | Chlorobenzene | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | Chloroethane | 2.2 U | 2.2 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | Chloromethane | 2.2 U | 2.2 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | Chlorotrifluoroethylene | 2.2 U | 2.2 | 11 | 10 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | cis-1,2-Dichloroethene | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | cis-1,3-Dichloropropene | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | Dibromochloromethane | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | Dibromomethane | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | Dichlorodifluoromethane | 2.2 U | 2.2 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | Ethylbenzene | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | Hexachlorobutadiene | 2.2 U | 2.2 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | Isopropylbenzene | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | m,p-Xylenes | 2.2 U | 2.2 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | Methylene chloride | 2.2 U | 2.2 | 11 | 10 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | Methyl-tert-butyl Ether (MTBE) | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | n-butylbenzene | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | n-Propylbenzene | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | o-Xylene | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | p-Isopropyltoluene | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | sec-Butylbenzene | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |

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**Test Stand Biovent Analytical Data**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | FSP SL | Units | FSP Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1278 | BVBS1278S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | Styrene | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | tert-Butylbenzene | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | Tetrachloroethene | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | Toluene | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | trans-1,2-Dichloroethene | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | trans-1,3-Dichloropropene | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | Trichloroethene | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | Trichlorofluoromethane | 2.2 U | 2.2 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | Trichloromethane (Chloroform) | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | Vinyl chloride | 2.2 U | 2.2 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S002 | N | 16 Jul 2014 | 5 - 6 | SW9045D | GENCHEM | pH | 7.32 = | | | | PH UNITS | | NC |
| SO | BVBS1278 | BVBS1278S002 | N | 16 Jul 2014 | 5 - 6 | Walkley-Black | GENCHEM | Total Organic Carbon | 663 U | 663 | 663 | | mg/kg | | NC |
| SO | BVBS1278 | BVBS1278S002 | N | 16 Jul 2014 | 5 - 6 | M8015D | HC | Diesel Range Organics (C12-C14) | 5500 U | 2800 | 5500 | 5000 | µg/kg | X | N |
| SO | BVBS1278 | BVBS1278S002 | N | 16 Jul 2014 | 5 - 6 | M8015D | HC | Diesel Range Organics (C15-C20) | 5500 U | 2800 | 5500 | 5000 | µg/kg | X | N |
| SO | BVBS1278 | BVBS1278S002 | N | 16 Jul 2014 | 5 - 6 | M8015D | HC | Diesel Range Organics (C21-C30) | 5500 U | 2800 | 5500 | 5000 | µg/kg | X | N |
| SO | BVBS1278 | BVBS1278S002 | N | 16 Jul 2014 | 5 - 6 | M8015D | HC | Diesel Range Organics (C8-C11) | 5500 U | 2800 | 5500 | 1000 | µg/kg | X | RL |
| SO | BVBS1278 | BVBS1278S002 | N | 16 Jul 2014 | 5 - 6 | SW8015B | HC | GRO (C6-C12) | 1000 U | 510 | 1000 | 1000 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S002 | N | 16 Jul 2014 | 5 - 6 | M8015D | HC | ORO (C31-C40) | 11000 U | 5500 | 11000 | 10000 | µg/kg | X | N |
| SO | BVBS1278 | BVBS1278S002 | N | 16 Jul 2014 | 5 - 6 | M8015D | HC | TOTAL EFH(C8-C40) | 5500 U | 2800 | 5500 | 10000 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S002 | N | 16 Jul 2014 | 5 - 6 | SW8270C-SIM | PAH | 1-Methylnaphthalene | 11 U | 5.5 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1278 | BVBS1278S002 | N | 16 Jul 2014 | 5 - 6 | SW8270C-SIM | PAH | 2-Methylnaphthalene | 11 U | 5.5 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1278 | BVBS1278S002 | N | 16 Jul 2014 | 5 - 6 | SW8270C-SIM | PAH | Acenaphthene | 11 U | 5.5 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1278 | BVBS1278S002 | N | 16 Jul 2014 | 5 - 6 | SW8270C-SIM | PAH | Acenaphthylene | 11 U | 5.5 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1278 | BVBS1278S002 | N | 16 Jul 2014 | 5 - 6 | SW8270C-SIM | PAH | Anthracene | 11 U | 5.5 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1278 | BVBS1278S002 | N | 16 Jul 2014 | 5 - 6 | SW8270C-SIM | PAH | Benzo(a)anthracene | 11 U | 5.5 | 11 | | µg/kg | | NC |
| SO | BVBS1278 | BVBS1278S002 | N | 16 Jul 2014 | 5 - 6 | SW8270C-SIM | PAH | Benzo(a)pyrene | 11 U | 5.5 | 11 | | µg/kg | | NC |
| SO | BVBS1278 | BVBS1278S002 | N | 16 Jul 2014 | 5 - 6 | SW8270C-SIM | PAH | Benzo(b)fluoranthene | 11 U | 5.5 | 11 | | µg/kg | | NC |
| SO | BVBS1278 | BVBS1278S002 | N | 16 Jul 2014 | 5 - 6 | SW8270C-SIM | PAH | Benzo(ghi)perylene | 11 U | 5.5 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1278 | BVBS1278S002 | N | 16 Jul 2014 | 5 - 6 | SW8270C-SIM | PAH | Benzo(k)fluoranthene | 11 U | 5.5 | 11 | | µg/kg | | NC |
| SO | BVBS1278 | BVBS1278S002 | N | 16 Jul 2014 | 5 - 6 | SW8270C-SIM | PAH | Chrysene | 11 U | 5.5 | 11 | | µg/kg | | NC |
| SO | BVBS1278 | BVBS1278S002 | N | 16 Jul 2014 | 5 - 6 | SW8270C-SIM | PAH | Dibenzo(a,h)anthracene | 11 U | 5.5 | 11 | | µg/kg | | NC |
| SO | BVBS1278 | BVBS1278S002 | N | 16 Jul 2014 | 5 - 6 | SW8270C-SIM | PAH | Fluoranthene | 11 U | 5.5 | 11 | 5.2 | µg/kg | X | RL |
| SO | BVBS1278 | BVBS1278S002 | N | 16 Jul 2014 | 5 - 6 | SW8270C-SIM | PAH | Fluorene | 11 U | 5.5 | 11 | 3.8 | µg/kg | X | RL |
| SO | BVBS1278 | BVBS1278S002 | N | 16 Jul 2014 | 5 - 6 | SW8270C-SIM | PAH | Indeno(1,2,3-cd)pyrene | 11 U | 5.5 | 11 | | µg/kg | | NC |
| SO | BVBS1278 | BVBS1278S002 | N | 16 Jul 2014 | 5 - 6 | SW8270C-SIM | PAH | Naphthalene | 11 U | 5.5 | 11 | 3.6 | µg/kg | X | RL |
| SO | BVBS1278 | BVBS1278S002 | N | 16 Jul 2014 | 5 - 6 | SW8270C-SIM | PAH | PAHTEQM | 0 U | | | 4.47 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S002 | N | 16 Jul 2014 | 5 - 6 | SW8270C-SIM | PAH | Phenanthrene | 11 U | 5.5 | 11 | 3.9 | µg/kg | X | RL |
| SO | BVBS1278 | BVBS1278S002 | N | 16 Jul 2014 | 5 - 6 | SW8270C-SIM | PAH | Pyrene | 11 U | 5.5 | 11 | 5.6 | µg/kg | X | N |

APPENDIX D-1

**Test Stand Biovent Analytical Data**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | FSP SL | Units | FSP Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1278 | BVBS1278S002 | N | 16 Jul 2014 | 5 - 6 | SW8270C-SIM | PHTH | Bis(2-ethylhexyl)phthalate | 22 U | 11 | 22 | 61 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S002 | N | 16 Jul 2014 | 5 - 6 | SW8270C-SIM | PHTH | Butyl benzyl phthalate | 22 U | 11 | 22 | 100 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S002 | N | 16 Jul 2014 | 5 - 6 | SW8270C-SIM | PHTH | Diethyl phthalate | 22 U | 11 | 22 | 27 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S002 | N | 16 Jul 2014 | 5 - 6 | SW8270C-SIM | PHTH | Dimethyl phthalate | 22 U | 11 | 22 | 27 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S002 | N | 16 Jul 2014 | 5 - 6 | SW8270C-SIM | PHTH | Di-n-butyl phthalate | 22 U | 11 | 22 | 27 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S002 | N | 16 Jul 2014 | 5 - 6 | SW8270C-SIM | PHTH | Di-n-octyl phthalate | 22 U | 11 | 22 | 27 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | SVOC | Diisopropyl ether | 1.1 U | 1.1 | 11 | 10 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S002 | N | 16 Jul 2014 | 5 - 6 | SW8270C-SIM | SVOC | n-Nitrosodimethylamine | 22 U | 11 | 22 | 10 | µg/kg | X | RL |
| SO | BVBS1278 | BVBS1278S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | SVOC | tert-Amyl methyl ether | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | SVOC | tert-Butyl alcohol | 11 U | 11 | 55 | 50 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | SVOC | tert-Butyl ethyl ether | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | 1,1,1,2-Tetrachloroethane | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | 1,1,1-Trichloroethane | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | 1,1,2,2-Tetrachloroethane | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | 1,1,2-Trichloro-1,2,2-trifluoroethane | 2.2 U | 2.2 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | 1,1,2-Trichloroethane | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | 1,1-Dichloroethane | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | 1,1-Dichloroethene | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | 1,1-Dichloropropene | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | 1,2,3-Trichlorobenzene | 2.2 U | 2.2 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | 1,2,3-Trichloropropane | 2.2 U | 2.2 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | 1,2,4-Trichlorobenzene | 2.2 U | 2.2 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | 1,2,4-Trimethylbenzene | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | 1,2-Dibromo-3-chloropropane | 2.2 U | 2.2 | 11 | 10 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | 1,2-Dibromoethane (EDB) | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | 1,2-Dichlorobenzene | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | 1,2-Dichloroethane | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | 1,2-Dichloropropane | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | 1,3,5-Trimethylbenzene | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | 1,3-Dichlorobenzene | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | 1,3-Dichloropropane | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | 1,4-Dichlorobenzene | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | 2,2-Dichloropropane | 2.2 U | 2.2 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | 2-Butanone (MEK) | 5.5 U | 5.5 | 22 | 20 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | 2-Chloro-1,1,1-trifluoroethane | 2.2 U | 2.2 | 11 | 10 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | 2-Chloroethyl vinyl ether | 2.2 U | 2.2 | 11 | 10 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | 2-Chlorotoluene | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | 2-Hexanone | 5.5 U | 5.5 | 11 | 10 | µg/kg | | N |

APPENDIX D-1

**Test Stand Biovent Analytical Data**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | FSP SL | Units | FSP Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1278 | BVBS1278S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | 4-Chlorotoluene | 1.1 U | 1.1 | 11 | 10 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | 4-Methyl-2-pentanone (MIBK) | 5.5 U | 5.5 | 11 | 10 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | Acetone | 5.5 U | 5.5 | 22 | 20 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | Benzene | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | Bromobenzene | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | Bromochloromethane | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | Bromodichloromethane | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | Bromoform | 2.2 U | 2.2 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | Bromomethane | 2.2 U | 2.2 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | Carbon tetrachloride | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | Chlorobenzene | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | Chloroethane | 2.2 U | 2.2 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | Chloromethane | 2.2 U | 2.2 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | Chlorotrifluoroethylene | 2.2 U | 2.2 | 11 | 10 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | cis-1,2-Dichloroethene | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | cis-1,3-Dichloropropene | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | Dibromochloromethane | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | Dibromomethane | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | Dichlorodifluoromethane | 2.2 U | 2.2 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | Ethylbenzene | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | Hexachlorobutadiene | 2.2 U | 2.2 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | Isopropylbenzene | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | m,p-Xylenes | 2.2 U | 2.2 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | Methylene chloride | 2.2 U | 2.2 | 11 | 10 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | Methyl-tert-butyl Ether (MTBE) | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | n-butylbenzene | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | n-Propylbenzene | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | o-Xylene | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | p-Isopropyltoluene | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | sec-Butylbenzene | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | Styrene | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | tert-Butylbenzene | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | Tetrachloroethene | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | Toluene | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | trans-1,2-Dichloroethene | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | trans-1,3-Dichloropropene | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | Trichloroethene | 1.1 J | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | Trichlorofluoromethane | 2.2 U | 2.2 | 5.5 | 5 | µg/kg | | N |

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**Test Stand Biovent Analytical Data**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | FSP SL | Units | FSP Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1278 | BVBS1278S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | Trichloromethane (Chloroform) | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | Vinyl chloride | 2.2 U | 2.2 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S003 | N | 11 Sep 2014 | 2 - 3 | SW9045D | GENCHEM | pH | 7.51 = | | | | PH UNITS | | NC |
| SO | BVBS1278 | BVBS1278S003 | N | 11 Sep 2014 | 2 - 3 | Walkley-Black | GENCHEM | Total Organic Carbon | 630 U | 630 | 630 | | mg/kg | | NC |
| SO | BVBS1278 | BVBS1278S003 | N | 11 Sep 2014 | 2 - 3 | M8015D | HC | Diesel Range Organics (C12-C14) | 5300 U | 2700 | 5300 | 5000 | µg/kg | X | N |
| SO | BVBS1278 | BVBS1278S003 | N | 11 Sep 2014 | 2 - 3 | M8015D | HC | Diesel Range Organics (C15-C20) | 5300 U | 2700 | 5300 | 5000 | µg/kg | X | N |
| SO | BVBS1278 | BVBS1278S003 | N | 11 Sep 2014 | 2 - 3 | M8015D | HC | Diesel Range Organics (C21-C30) | 4100 J | 2700 | 5300 | 5000 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S003 | N | 11 Sep 2014 | 2 - 3 | M8015D | HC | Diesel Range Organics (C8-C11) | 5300 U | 2700 | 5300 | 1000 | µg/kg | X | RL |
| SO | BVBS1278 | BVBS1278S003 | N | 11 Sep 2014 | 2 - 3 | SW8015B | HC | GRO (C6-C12) | 1200 U | 580 | 1200 | 1000 | µg/kg | X | N |
| SO | BVBS1278 | BVBS1278S003 | N | 11 Sep 2014 | 2 - 3 | M8015D | HC | ORO (C31-C40) | 10000 J | 5300 | 11000 | 10000 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S003 | N | 11 Sep 2014 | 2 - 3 | M8015D | HC | TOTAL EFH(C8-C40) | 15000 = | 2700 | 5300 | 10000 | µg/kg | X | Y |
| SO | BVBS1278 | BVBS1278S003 | N | 11 Sep 2014 | 2 - 3 | SW8270C-SIM | PAH | 1-Methylnaphthalene | 11 U | 5.3 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1278 | BVBS1278S003 | N | 11 Sep 2014 | 2 - 3 | SW8270C-SIM | PAH | 2-Methylnaphthalene | 11 U | 5.3 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1278 | BVBS1278S003 | N | 11 Sep 2014 | 2 - 3 | SW8270C-SIM | PAH | Acenaphthene | 11 U | 5.3 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1278 | BVBS1278S003 | N | 11 Sep 2014 | 2 - 3 | SW8270C-SIM | PAH | Acenaphthylene | 11 U | 5.3 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1278 | BVBS1278S003 | N | 11 Sep 2014 | 2 - 3 | SW8270C-SIM | PAH | Anthracene | 11 U | 5.3 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1278 | BVBS1278S003 | N | 11 Sep 2014 | 2 - 3 | SW8270C-SIM | PAH | Benzo(a)anthracene | 11 U | 5.3 | 11 | | µg/kg | | NC |
| SO | BVBS1278 | BVBS1278S003 | N | 11 Sep 2014 | 2 - 3 | SW8270C-SIM | PAH | Benzo(a)pyrene | 11 U | 5.3 | 11 | | µg/kg | | NC |
| SO | BVBS1278 | BVBS1278S003 | N | 11 Sep 2014 | 2 - 3 | SW8270C-SIM | PAH | Benzo(b)fluoranthene | 11 U | 5.3 | 11 | | µg/kg | | NC |
| SO | BVBS1278 | BVBS1278S003 | N | 11 Sep 2014 | 2 - 3 | SW8270C-SIM | PAH | Benzo(ghi)perylene | 11 U | 5.3 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1278 | BVBS1278S003 | N | 11 Sep 2014 | 2 - 3 | SW8270C-SIM | PAH | Benzo(k)fluoranthene | 11 U | 5.3 | 11 | | µg/kg | | NC |
| SO | BVBS1278 | BVBS1278S003 | N | 11 Sep 2014 | 2 - 3 | SW8270C-SIM | PAH | Chrysene | 11 U | 5.3 | 11 | | µg/kg | | NC |
| SO | BVBS1278 | BVBS1278S003 | N | 11 Sep 2014 | 2 - 3 | SW8270C-SIM | PAH | Dibenzo(a,h)anthracene | 11 U | 5.3 | 11 | | µg/kg | | NC |
| SO | BVBS1278 | BVBS1278S003 | N | 11 Sep 2014 | 2 - 3 | SW8270C-SIM | PAH | Fluoranthene | 11 U | 5.3 | 11 | 5.2 | µg/kg | X | RL |
| SO | BVBS1278 | BVBS1278S003 | N | 11 Sep 2014 | 2 - 3 | SW8270C-SIM | PAH | Fluorene | 11 U | 5.3 | 11 | 3.8 | µg/kg | X | RL |
| SO | BVBS1278 | BVBS1278S003 | N | 11 Sep 2014 | 2 - 3 | SW8270C-SIM | PAH | Indeno(1,2,3-cd)pyrene | 11 U | 5.3 | 11 | | µg/kg | | NC |
| SO | BVBS1278 | BVBS1278S003 | N | 11 Sep 2014 | 2 - 3 | SW8270C-SIM | PAH | Naphthalene | 11 U | 5.3 | 11 | 3.6 | µg/kg | X | RL |
| SO | BVBS1278 | BVBS1278S003 | N | 11 Sep 2014 | 2 - 3 | SW8270C-SIM | PAH | PAHTEQM | 0 U | | | 4.47 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S003 | N | 11 Sep 2014 | 2 - 3 | SW8270C-SIM | PAH | Phenanthrene | 11 U | 5.3 | 11 | 3.9 | µg/kg | X | RL |
| SO | BVBS1278 | BVBS1278S003 | N | 11 Sep 2014 | 2 - 3 | SW8270C-SIM | PAH | Pyrene | 11 U | 5.3 | 11 | 5.6 | µg/kg | X | N |
| SO | BVBS1278 | BVBS1278S003 | N | 11 Sep 2014 | 2 - 3 | SW8270C-SIM | PHTH | Bis(2-ethylhexyl)phthalate | 21 U | 11 | 21 | 61 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S003 | N | 11 Sep 2014 | 2 - 3 | SW8270C-SIM | PHTH | Butyl benzyl phthalate | 21 U | 11 | 21 | 100 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S003 | N | 11 Sep 2014 | 2 - 3 | SW8270C-SIM | PHTH | Diethyl phthalate | 21 U | 11 | 21 | 27 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S003 | N | 11 Sep 2014 | 2 - 3 | SW8270C-SIM | PHTH | Dimethyl phthalate | 21 U | 11 | 21 | 27 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S003 | N | 11 Sep 2014 | 2 - 3 | SW8270C-SIM | PHTH | Di-n-butyl phthalate | 21 U | 11 | 21 | 27 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S003 | N | 11 Sep 2014 | 2 - 3 | SW8270C-SIM | PHTH | Di-n-octyl phthalate | 21 U | 11 | 21 | 27 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | SVOC | Diisopropyl ether | 1.1 U | 1.1 | 11 | 10 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S003 | N | 11 Sep 2014 | 2 - 3 | SW8270C-SIM | SVOC | n-Nitrosodimethylamine | 21 U | 11 | 21 | 10 | µg/kg | X | RL |

APPENDIX D-1

**Test Stand Biovent Analytical Data**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | FSP SL | Units | FSP Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1278 | BVBS1278S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | SVOC | tert-Amyl methyl ether | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | SVOC | tert-Butyl alcohol | 11 U | 11 | 57 | 50 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | SVOC | tert-Butyl ethyl ether | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | 1,1,1,2-Tetrachloroethane | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | 1,1,1-Trichloroethane | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | 1,1,2,2-Tetrachloroethane | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | 1,1,2-Trichloro-1,2,2-trifluoroethane | 2.3 U | 2.3 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | 1,1,2-Trichloroethane | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | 1,1-Dichloroethane | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | 1,1-Dichloroethene | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | 1,1-Dichloropropene | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | 1,2,3-Trichlorobenzene | 2.3 U | 2.3 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | 1,2,3-Trichloropropane | 2.3 U | 2.3 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | 1,2,4-Trichlorobenzene | 2.3 U | 2.3 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | 1,2,4-Trimethylbenzene | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | 1,2-Dibromo-3-chloropropane | 2.3 U | 2.3 | 11 | 10 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | 1,2-Dibromoethane (EDB) | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | 1,2-Dichlorobenzene | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | 1,2-Dichloroethane | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | 1,2-Dichloropropane | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | 1,3,5-Trimethylbenzene | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | 1,3-Dichlorobenzene | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | 1,3-Dichloropropane | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | 1,4-Dichlorobenzene | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | 2,2-Dichloropropane | 2.3 U | 2.3 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | 2-Butanone (MEK) | 5.7 U | 5.7 | 23 | 20 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | 2-Chloro-1,1,1-trifluoroethane | 2.3 U | 2.3 | 11 | 10 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | 2-Chloroethyl vinyl ether | 2.3 U | 2.3 | 11 | 10 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | 2-Chlorotoluene | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | 2-Hexanone | 5.7 U | 5.7 | 11 | 10 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | 4-Chlorotoluene | 1.1 U | 1.1 | 11 | 10 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | 4-Methyl-2-pentanone (MIBK) | 5.7 U | 5.7 | 11 | 10 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | Acetone | 5.7 U | 5.7 | 23 | 20 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | Benzene | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | Bromobenzene | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | Bromochloromethane | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | Bromodichloromethane | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | Bromoform | 2.3 U | 2.3 | 5.7 | 5 | µg/kg | | N |

APPENDIX D-1

**Test Stand Biovent Analytical Data**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | FSP SL | Units | FSP Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1278 | BVBS1278S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | Bromomethane | 2.3 U | 2.3 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | Carbon tetrachloride | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | Chlorobenzene | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | Chloroethane | 2.3 U | 2.3 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | Chloromethane | 2.3 U | 2.3 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | Chlorotrifluoroethylene | 2.3 U | 2.3 | 11 | 10 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | cis-1,2-Dichloroethene | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | cis-1,3-Dichloropropene | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | Dibromochloromethane | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | Dibromomethane | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | Dichlorodifluoromethane | 2.3 U | 2.3 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | Ethylbenzene | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | Hexachlorobutadiene | 2.3 U | 2.3 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | Isopropylbenzene | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | m,p-Xylenes | 2.3 U | 2.3 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | Methylene chloride | 2.3 U | 2.3 | 11 | 10 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | Methyl-tert-butyl Ether (MTBE) | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | n-butylbenzene | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | n-Propylbenzene | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | o-Xylene | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | p-Isopropyltoluene | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | sec-Butylbenzene | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | Styrene | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | tert-Butylbenzene | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | Tetrachloroethene | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | Toluene | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | trans-1,2-Dichloroethene | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | trans-1,3-Dichloropropene | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | Trichloroethene | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | Trichlorofluoromethane | 2.3 U | 2.3 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | Trichloromethane (Chloroform) | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | Vinyl chloride | 2.3 U | 2.3 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S004 | N | 11 Sep 2014 | 5 - 6 | SW9045D | GENCHEM | pH | 7.43 = | | | | PH UNITS | | NC |
| SO | BVBS1278 | BVBS1278S004 | N | 11 Sep 2014 | 5 - 6 | Walkley-Black | GENCHEM | Total Organic Carbon | 644 U | 644 | 644 | | mg/kg | | NC |
| SO | BVBS1278 | BVBS1278S004 | N | 11 Sep 2014 | 5 - 6 | M8015D | HC | Diesel Range Organics (C12-C14) | 5400 U | 2700 | 5400 | 5000 | µg/kg | X | N |
| SO | BVBS1278 | BVBS1278S004 | N | 11 Sep 2014 | 5 - 6 | M8015D | HC | Diesel Range Organics (C15-C20) | 5400 U | 2700 | 5400 | 5000 | µg/kg | X | N |
| SO | BVBS1278 | BVBS1278S004 | N | 11 Sep 2014 | 5 - 6 | M8015D | HC | Diesel Range Organics (C21-C30) | 5400 U | 2700 | 5400 | 5000 | µg/kg | X | N |
| SO | BVBS1278 | BVBS1278S004 | N | 11 Sep 2014 | 5 - 6 | M8015D | HC | Diesel Range Organics (C8-C11) | 5400 U | 2700 | 5400 | 1000 | µg/kg | X | RL |

APPENDIX D-1

**Test Stand Biovent Analytical Data**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | FSP SL | Units | FSP Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1278 | BVBS1278S004 | N | 11 Sep 2014 | 5 - 6 | SW8015B | HC | GRO (C6-C12) | 1200 U | 580 | 1200 | 1000 | µg/kg | X | N |
| SO | BVBS1278 | BVBS1278S004 | N | 11 Sep 2014 | 5 - 6 | M8015D | HC | ORO (C31-C40) | 11000 U | 5400 | 11000 | 10000 | µg/kg | X | N |
| SO | BVBS1278 | BVBS1278S004 | N | 11 Sep 2014 | 5 - 6 | M8015D | HC | TOTAL EFH(C8-C40) | 5400 U | 2700 | 5400 | 10000 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S004 | N | 11 Sep 2014 | 5 - 6 | SW8270C-SIM | PAH | 1-Methylnaphthalene | 11 U | 5.4 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1278 | BVBS1278S004 | N | 11 Sep 2014 | 5 - 6 | SW8270C-SIM | PAH | 2-Methylnaphthalene | 11 U | 5.4 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1278 | BVBS1278S004 | N | 11 Sep 2014 | 5 - 6 | SW8270C-SIM | PAH | Acenaphthene | 11 U | 5.4 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1278 | BVBS1278S004 | N | 11 Sep 2014 | 5 - 6 | SW8270C-SIM | PAH | Acenaphthylene | 11 U | 5.4 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1278 | BVBS1278S004 | N | 11 Sep 2014 | 5 - 6 | SW8270C-SIM | PAH | Anthracene | 11 U | 5.4 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1278 | BVBS1278S004 | N | 11 Sep 2014 | 5 - 6 | SW8270C-SIM | PAH | Benzo(a)anthracene | 11 U | 5.4 | 11 | | µg/kg | | NC |
| SO | BVBS1278 | BVBS1278S004 | N | 11 Sep 2014 | 5 - 6 | SW8270C-SIM | PAH | Benzo(a)pyrene | 11 U | 5.4 | 11 | | µg/kg | | NC |
| SO | BVBS1278 | BVBS1278S004 | N | 11 Sep 2014 | 5 - 6 | SW8270C-SIM | PAH | Benzo(b)fluoranthene | 11 U | 5.4 | 11 | | µg/kg | | NC |
| SO | BVBS1278 | BVBS1278S004 | N | 11 Sep 2014 | 5 - 6 | SW8270C-SIM | PAH | Benzo(ghi)perylene | 11 U | 5.4 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1278 | BVBS1278S004 | N | 11 Sep 2014 | 5 - 6 | SW8270C-SIM | PAH | Benzo(k)fluoranthene | 11 U | 5.4 | 11 | | µg/kg | | NC |
| SO | BVBS1278 | BVBS1278S004 | N | 11 Sep 2014 | 5 - 6 | SW8270C-SIM | PAH | Chrysene | 11 U | 5.4 | 11 | | µg/kg | | NC |
| SO | BVBS1278 | BVBS1278S004 | N | 11 Sep 2014 | 5 - 6 | SW8270C-SIM | PAH | Dibenzo(a,h)anthracene | 11 U | 5.4 | 11 | | µg/kg | | NC |
| SO | BVBS1278 | BVBS1278S004 | N | 11 Sep 2014 | 5 - 6 | SW8270C-SIM | PAH | Fluoranthene | 11 U | 5.4 | 11 | 5.2 | µg/kg | X | RL |
| SO | BVBS1278 | BVBS1278S004 | N | 11 Sep 2014 | 5 - 6 | SW8270C-SIM | PAH | Fluorene | 11 U | 5.4 | 11 | 3.8 | µg/kg | X | RL |
| SO | BVBS1278 | BVBS1278S004 | N | 11 Sep 2014 | 5 - 6 | SW8270C-SIM | PAH | Indeno(1,2,3-cd)pyrene | 11 U | 5.4 | 11 | | µg/kg | | NC |
| SO | BVBS1278 | BVBS1278S004 | N | 11 Sep 2014 | 5 - 6 | SW8270C-SIM | PAH | Naphthalene | 11 U | 5.4 | 11 | 3.6 | µg/kg | X | RL |
| SO | BVBS1278 | BVBS1278S004 | N | 11 Sep 2014 | 5 - 6 | SW8270C-SIM | PAH | PAHTEQM | 0 U | | | 4.47 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S004 | N | 11 Sep 2014 | 5 - 6 | SW8270C-SIM | PAH | Phenanthrene | 11 U | 5.4 | 11 | 3.9 | µg/kg | X | RL |
| SO | BVBS1278 | BVBS1278S004 | N | 11 Sep 2014 | 5 - 6 | SW8270C-SIM | PAH | Pyrene | 11 U | 5.4 | 11 | 5.6 | µg/kg | X | N |
| SO | BVBS1278 | BVBS1278S004 | N | 11 Sep 2014 | 5 - 6 | SW8270C-SIM | PHTH | Bis(2-ethylhexyl)phthalate | 22 U | 11 | 22 | 61 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S004 | N | 11 Sep 2014 | 5 - 6 | SW8270C-SIM | PHTH | Butyl benzyl phthalate | 22 U | 11 | 22 | 100 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S004 | N | 11 Sep 2014 | 5 - 6 | SW8270C-SIM | PHTH | Diethyl phthalate | 22 U | 11 | 22 | 27 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S004 | N | 11 Sep 2014 | 5 - 6 | SW8270C-SIM | PHTH | Dimethyl phthalate | 22 U | 11 | 22 | 27 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S004 | N | 11 Sep 2014 | 5 - 6 | SW8270C-SIM | PHTH | Di-n-butyl phthalate | 22 U | 11 | 22 | 27 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S004 | N | 11 Sep 2014 | 5 - 6 | SW8270C-SIM | PHTH | Di-n-octyl phthalate | 22 U | 11 | 22 | 27 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S004 | N | 11 Sep 2014 | 5 - 6 | SW8260B | SVOC | Diisopropyl ether | 1.1 U | 1.1 | 11 | 10 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S004 | N | 11 Sep 2014 | 5 - 6 | SW8270C-SIM | SVOC | n-Nitrosodimethylamine | 22 U | 11 | 22 | 10 | µg/kg | X | RL |
| SO | BVBS1278 | BVBS1278S004 | N | 11 Sep 2014 | 5 - 6 | SW8260B | SVOC | tert-Amyl methyl ether | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S004 | N | 11 Sep 2014 | 5 - 6 | SW8260B | SVOC | tert-Butyl alcohol | 11 U | 11 | 54 | 50 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S004 | N | 11 Sep 2014 | 5 - 6 | SW8260B | SVOC | tert-Butyl ethyl ether | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S004 | N | 11 Sep 2014 | 5 - 6 | SW8260B | VOC | 1,1,1,2-Tetrachloroethane | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S004 | N | 11 Sep 2014 | 5 - 6 | SW8260B | VOC | 1,1,1-Trichloroethane | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S004 | N | 11 Sep 2014 | 5 - 6 | SW8260B | VOC | 1,1,2,2-Tetrachloroethane | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S004 | N | 11 Sep 2014 | 5 - 6 | SW8260B | VOC | 1,1,2-Trichloro-1,2,2-trifluoroethane | 2.1 U | 2.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S004 | N | 11 Sep 2014 | 5 - 6 | SW8260B | VOC | 1,1,2-Trichloroethane | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |

APPENDIX D-1

**Test Stand Biovent Analytical Data**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | FSP SL | Units | FSP Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1278 | BVBS1278S004 | N | 11 Sep 2014 | 5 - 6 | SW8260B | VOC | 1,1-Dichloroethane | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S004 | N | 11 Sep 2014 | 5 - 6 | SW8260B | VOC | 1,1-Dichloroethene | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S004 | N | 11 Sep 2014 | 5 - 6 | SW8260B | VOC | 1,1-Dichloropropene | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S004 | N | 11 Sep 2014 | 5 - 6 | SW8260B | VOC | 1,2,3-Trichlorobenzene | 2.1 U | 2.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S004 | N | 11 Sep 2014 | 5 - 6 | SW8260B | VOC | 1,2,3-Trichloropropane | 2.1 U | 2.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S004 | N | 11 Sep 2014 | 5 - 6 | SW8260B | VOC | 1,2,4-Trichlorobenzene | 2.1 U | 2.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S004 | N | 11 Sep 2014 | 5 - 6 | SW8260B | VOC | 1,2,4-Trimethylbenzene | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S004 | N | 11 Sep 2014 | 5 - 6 | SW8260B | VOC | 1,2-Dibromo-3-chloropropane | 2.1 U | 2.1 | 11 | 10 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S004 | N | 11 Sep 2014 | 5 - 6 | SW8260B | VOC | 1,2-Dibromoethane (EDB) | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S004 | N | 11 Sep 2014 | 5 - 6 | SW8260B | VOC | 1,2-Dichlorobenzene | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S004 | N | 11 Sep 2014 | 5 - 6 | SW8260B | VOC | 1,2-Dichloroethane | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S004 | N | 11 Sep 2014 | 5 - 6 | SW8260B | VOC | 1,2-Dichloropropane | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S004 | N | 11 Sep 2014 | 5 - 6 | SW8260B | VOC | 1,3,5-Trimethylbenzene | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S004 | N | 11 Sep 2014 | 5 - 6 | SW8260B | VOC | 1,3-Dichlorobenzene | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S004 | N | 11 Sep 2014 | 5 - 6 | SW8260B | VOC | 1,3-Dichloropropane | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S004 | N | 11 Sep 2014 | 5 - 6 | SW8260B | VOC | 1,4-Dichlorobenzene | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S004 | N | 11 Sep 2014 | 5 - 6 | SW8260B | VOC | 2,2-Dichloropropane | 2.1 U | 2.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S004 | N | 11 Sep 2014 | 5 - 6 | SW8260B | VOC | 2-Butanone (MEK) | 5.4 U | 5.4 | 21 | 20 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S004 | N | 11 Sep 2014 | 5 - 6 | SW8260B | VOC | 2-Chloro-1,1,1-trifluoroethane | 2.1 U | 2.1 | 11 | 10 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S004 | N | 11 Sep 2014 | 5 - 6 | SW8260B | VOC | 2-Chloroethyl vinyl ether | 2.1 U | 2.1 | 11 | 10 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S004 | N | 11 Sep 2014 | 5 - 6 | SW8260B | VOC | 2-Chlorotoluene | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S004 | N | 11 Sep 2014 | 5 - 6 | SW8260B | VOC | 2-Hexanone | 5.4 U | 5.4 | 11 | 10 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S004 | N | 11 Sep 2014 | 5 - 6 | SW8260B | VOC | 4-Chlorotoluene | 1.1 U | 1.1 | 11 | 10 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S004 | N | 11 Sep 2014 | 5 - 6 | SW8260B | VOC | 4-Methyl-2-pentanone (MIBK) | 5.4 U | 5.4 | 11 | 10 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S004 | N | 11 Sep 2014 | 5 - 6 | SW8260B | VOC | Acetone | 5.4 U | 5.4 | 21 | 20 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S004 | N | 11 Sep 2014 | 5 - 6 | SW8260B | VOC | Benzene | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S004 | N | 11 Sep 2014 | 5 - 6 | SW8260B | VOC | Bromobenzene | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S004 | N | 11 Sep 2014 | 5 - 6 | SW8260B | VOC | Bromochloromethane | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S004 | N | 11 Sep 2014 | 5 - 6 | SW8260B | VOC | Bromodichloromethane | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S004 | N | 11 Sep 2014 | 5 - 6 | SW8260B | VOC | Bromoform | 2.1 U | 2.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S004 | N | 11 Sep 2014 | 5 - 6 | SW8260B | VOC | Bromomethane | 2.1 U | 2.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S004 | N | 11 Sep 2014 | 5 - 6 | SW8260B | VOC | Carbon tetrachloride | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S004 | N | 11 Sep 2014 | 5 - 6 | SW8260B | VOC | Chlorobenzene | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S004 | N | 11 Sep 2014 | 5 - 6 | SW8260B | VOC | Chloroethane | 2.1 U | 2.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S004 | N | 11 Sep 2014 | 5 - 6 | SW8260B | VOC | Chloromethane | 2.1 U | 2.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S004 | N | 11 Sep 2014 | 5 - 6 | SW8260B | VOC | Chlorotrifluoroethylene | 2.1 U | 2.1 | 11 | 10 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S004 | N | 11 Sep 2014 | 5 - 6 | SW8260B | VOC | cis-1,2-Dichloroethene | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S004 | N | 11 Sep 2014 | 5 - 6 | SW8260B | VOC | cis-1,3-Dichloropropene | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |

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**Test Stand Biovent Analytical Data**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | FSP SL | Units | FSP Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1278 | BVBS1278S004 | N | 11 Sep 2014 | 5 - 6 | SW8260B | VOC | Dibromochloromethane | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S004 | N | 11 Sep 2014 | 5 - 6 | SW8260B | VOC | Dibromomethane | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S004 | N | 11 Sep 2014 | 5 - 6 | SW8260B | VOC | Dichlorodifluoromethane | 2.1 U | 2.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S004 | N | 11 Sep 2014 | 5 - 6 | SW8260B | VOC | Ethylbenzene | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S004 | N | 11 Sep 2014 | 5 - 6 | SW8260B | VOC | Hexachlorobutadiene | 2.1 U | 2.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S004 | N | 11 Sep 2014 | 5 - 6 | SW8260B | VOC | Isopropylbenzene | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S004 | N | 11 Sep 2014 | 5 - 6 | SW8260B | VOC | m,p-Xylenes | 2.1 U | 2.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S004 | N | 11 Sep 2014 | 5 - 6 | SW8260B | VOC | Methylene chloride | 2.1 U | 2.1 | 11 | 10 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S004 | N | 11 Sep 2014 | 5 - 6 | SW8260B | VOC | Methyl-tert-butyl Ether (MTBE) | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S004 | N | 11 Sep 2014 | 5 - 6 | SW8260B | VOC | n-butylbenzene | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S004 | N | 11 Sep 2014 | 5 - 6 | SW8260B | VOC | n-Propylbenzene | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S004 | N | 11 Sep 2014 | 5 - 6 | SW8260B | VOC | o-Xylene | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S004 | N | 11 Sep 2014 | 5 - 6 | SW8260B | VOC | p-Isopropyltoluene | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S004 | N | 11 Sep 2014 | 5 - 6 | SW8260B | VOC | sec-Butylbenzene | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S004 | N | 11 Sep 2014 | 5 - 6 | SW8260B | VOC | Styrene | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S004 | N | 11 Sep 2014 | 5 - 6 | SW8260B | VOC | tert-Butylbenzene | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S004 | N | 11 Sep 2014 | 5 - 6 | SW8260B | VOC | Tetrachloroethene | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S004 | N | 11 Sep 2014 | 5 - 6 | SW8260B | VOC | Toluene | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S004 | N | 11 Sep 2014 | 5 - 6 | SW8260B | VOC | trans-1,2-Dichloroethene | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S004 | N | 11 Sep 2014 | 5 - 6 | SW8260B | VOC | trans-1,3-Dichloropropene | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S004 | N | 11 Sep 2014 | 5 - 6 | SW8260B | VOC | Trichloroethene | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S004 | N | 11 Sep 2014 | 5 - 6 | SW8260B | VOC | Trichlorofluoromethane | 2.1 U | 2.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S004 | N | 11 Sep 2014 | 5 - 6 | SW8260B | VOC | Trichloromethane (Chloroform) | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1278 | BVBS1278S004 | N | 11 Sep 2014 | 5 - 6 | SW8260B | VOC | Vinyl chloride | 2.1 U | 2.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279D003 | FD | 11 Sep 2014 | 2 - 3 | SW9045D | GENCHEM | pH | 8.4 = | | | | PH UNITS | | NC |
| SO | BVBS1279 | BVBS1279D003 | FD | 11 Sep 2014 | 2 - 3 | Walkley-Black | GENCHEM | Total Organic Carbon | 647 U | 647 | 647 | | mg/kg | | NC |
| SO | BVBS1279 | BVBS1279D003 | FD | 11 Sep 2014 | 2 - 3 | M8015D | HC | Diesel Range Organics (C12-C14) | 5400 U | 2700 | 5400 | 5000 | µg/kg | X | N |
| SO | BVBS1279 | BVBS1279D003 | FD | 11 Sep 2014 | 2 - 3 | M8015D | HC | Diesel Range Organics (C15-C20) | 5400 U | 2700 | 5400 | 5000 | µg/kg | X | N |
| SO | BVBS1279 | BVBS1279D003 | FD | 11 Sep 2014 | 2 - 3 | M8015D | HC | Diesel Range Organics (C21-C30) | 5400 UJ | 2700 | 5400 | 5000 | µg/kg | X | N |
| SO | BVBS1279 | BVBS1279D003 | FD | 11 Sep 2014 | 2 - 3 | M8015D | HC | Diesel Range Organics (C8-C11) | 5400 U | 2700 | 5400 | 1000 | µg/kg | X | RL |
| SO | BVBS1279 | BVBS1279D003 | FD | 11 Sep 2014 | 2 - 3 | SW8015B | HC | GRO (C6-C12) | 1100 U | 530 | 1100 | 1000 | µg/kg | X | N |
| SO | BVBS1279 | BVBS1279D003 | FD | 11 Sep 2014 | 2 - 3 | M8015D | HC | ORO (C31-C40) | 11000 U | 5400 | 11000 | 10000 | µg/kg | X | N |
| SO | BVBS1279 | BVBS1279D003 | FD | 11 Sep 2014 | 2 - 3 | M8015D | HC | TOTAL EFH(C8-C40) | 5400 UJ | 2700 | 5400 | 10000 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279D003 | FD | 11 Sep 2014 | 2 - 3 | SW8270C-SIM | PAH | 1-Methylnaphthalene | 11 U | 5.4 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1279 | BVBS1279D003 | FD | 11 Sep 2014 | 2 - 3 | SW8270C-SIM | PAH | 2-Methylnaphthalene | 11 U | 5.4 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1279 | BVBS1279D003 | FD | 11 Sep 2014 | 2 - 3 | SW8270C-SIM | PAH | Acenaphthene | 11 U | 5.4 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1279 | BVBS1279D003 | FD | 11 Sep 2014 | 2 - 3 | SW8270C-SIM | PAH | Acenaphthylene | 11 U | 5.4 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1279 | BVBS1279D003 | FD | 11 Sep 2014 | 2 - 3 | SW8270C-SIM | PAH | Anthracene | 11 U | 5.4 | 11 | 2.5 | µg/kg | X | RL |

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**Test Stand Biovent Analytical Data**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | FSP SL | Units | FSP Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1279 | BVBS1279D003 | FD | 11 Sep 2014 | 2 - 3 | SW8270C-SIM | PAH | Benzo(a)anthracene | 11 U | 5.4 | 11 | | µg/kg | | NC |
| SO | BVBS1279 | BVBS1279D003 | FD | 11 Sep 2014 | 2 - 3 | SW8270C-SIM | PAH | Benzo(a)pyrene | 11 U | 5.4 | 11 | | µg/kg | | NC |
| SO | BVBS1279 | BVBS1279D003 | FD | 11 Sep 2014 | 2 - 3 | SW8270C-SIM | PAH | Benzo(b)fluoranthene | 11 U | 5.4 | 11 | | µg/kg | | NC |
| SO | BVBS1279 | BVBS1279D003 | FD | 11 Sep 2014 | 2 - 3 | SW8270C-SIM | PAH | Benzo(ghi)perylene | 11 U | 5.4 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1279 | BVBS1279D003 | FD | 11 Sep 2014 | 2 - 3 | SW8270C-SIM | PAH | Benzo(k)fluoranthene | 11 U | 5.4 | 11 | | µg/kg | | NC |
| SO | BVBS1279 | BVBS1279D003 | FD | 11 Sep 2014 | 2 - 3 | SW8270C-SIM | PAH | Chrysene | 11 U | 5.4 | 11 | | µg/kg | | NC |
| SO | BVBS1279 | BVBS1279D003 | FD | 11 Sep 2014 | 2 - 3 | SW8270C-SIM | PAH | Dibenzo(a,h)anthracene | 11 U | 5.4 | 11 | | µg/kg | | NC |
| SO | BVBS1279 | BVBS1279D003 | FD | 11 Sep 2014 | 2 - 3 | SW8270C-SIM | PAH | Fluoranthene | 11 U | 5.4 | 11 | 5.2 | µg/kg | X | RL |
| SO | BVBS1279 | BVBS1279D003 | FD | 11 Sep 2014 | 2 - 3 | SW8270C-SIM | PAH | Fluorene | 11 U | 5.4 | 11 | 3.8 | µg/kg | X | RL |
| SO | BVBS1279 | BVBS1279D003 | FD | 11 Sep 2014 | 2 - 3 | SW8270C-SIM | PAH | Indeno(1,2,3-cd)pyrene | 11 U | 5.4 | 11 | | µg/kg | | NC |
| SO | BVBS1279 | BVBS1279D003 | FD | 11 Sep 2014 | 2 - 3 | SW8270C-SIM | PAH | Naphthalene | 11 U | 5.4 | 11 | 3.6 | µg/kg | X | RL |
| SO | BVBS1279 | BVBS1279D003 | FD | 11 Sep 2014 | 2 - 3 | SW8270C-SIM | PAH | PAHTEQM | 0 U | | | 4.47 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279D003 | FD | 11 Sep 2014 | 2 - 3 | SW8270C-SIM | PAH | Phenanthrene | 11 U | 5.4 | 11 | 3.9 | µg/kg | X | RL |
| SO | BVBS1279 | BVBS1279D003 | FD | 11 Sep 2014 | 2 - 3 | SW8270C-SIM | PAH | Pyrene | 11 U | 5.4 | 11 | 5.6 | µg/kg | X | N |
| SO | BVBS1279 | BVBS1279D003 | FD | 11 Sep 2014 | 2 - 3 | SW8270C-SIM | PHTH | Bis(2-ethylhexyl)phthalate | 14 J | 11 | 22 | 61 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279D003 | FD | 11 Sep 2014 | 2 - 3 | SW8270C-SIM | PHTH | Butyl benzyl phthalate | 22 U | 11 | 22 | 100 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279D003 | FD | 11 Sep 2014 | 2 - 3 | SW8270C-SIM | PHTH | Diethyl phthalate | 22 U | 11 | 22 | 27 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279D003 | FD | 11 Sep 2014 | 2 - 3 | SW8270C-SIM | PHTH | Dimethyl phthalate | 22 U | 11 | 22 | 27 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279D003 | FD | 11 Sep 2014 | 2 - 3 | SW8270C-SIM | PHTH | Di-n-butyl phthalate | 22 U | 11 | 22 | 27 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279D003 | FD | 11 Sep 2014 | 2 - 3 | SW8270C-SIM | PHTH | Di-n-octyl phthalate | 22 U | 11 | 22 | 27 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279D003 | FD | 11 Sep 2014 | 2 - 3 | SW8260B | SVOC | Diisopropyl ether | 1 U | 1 | 10 | 10 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279D003 | FD | 11 Sep 2014 | 2 - 3 | SW8270C-SIM | SVOC | n-Nitrosodimethylamine | 22 U | 11 | 22 | 10 | µg/kg | X | RL |
| SO | BVBS1279 | BVBS1279D003 | FD | 11 Sep 2014 | 2 - 3 | SW8260B | SVOC | tert-Amyl methyl ether | 1 U | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279D003 | FD | 11 Sep 2014 | 2 - 3 | SW8260B | SVOC | tert-Butyl alcohol | 10 U | 10 | 52 | 50 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279D003 | FD | 11 Sep 2014 | 2 - 3 | SW8260B | SVOC | tert-Butyl ethyl ether | 1 U | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279D003 | FD | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | 1,1,1,2-Tetrachloroethane | 1 U | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279D003 | FD | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | 1,1,1-Trichloroethane | 1 U | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279D003 | FD | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | 1,1,2,2-Tetrachloroethane | 1 U | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279D003 | FD | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | 1,1,2-Trichloro-1,2,2-trifluoroethane | 2.1 U | 2.1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279D003 | FD | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | 1,1,2-Trichloroethane | 1 U | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279D003 | FD | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | 1,1-Dichloroethane | 1 U | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279D003 | FD | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | 1,1-Dichloroethene | 1 U | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279D003 | FD | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | 1,1-Dichloropropene | 1 U | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279D003 | FD | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | 1,2,3-Trichlorobenzene | 2.1 U | 2.1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279D003 | FD | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | 1,2,3-Trichloropropane | 2.1 U | 2.1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279D003 | FD | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | 1,2,4-Trichlorobenzene | 2.1 U | 2.1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279D003 | FD | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | 1,2,4-Trimethylbenzene | 1 U | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279D003 | FD | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | 1,2-Dibromo-3-chloropropane | 2.1 U | 2.1 | 10 | 10 | µg/kg | | N |

APPENDIX D-1

**Test Stand Biovent Analytical Data**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | FSP SL | Units | FSP Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1279 | BVBS1279D003 | FD | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | 1,2-Dibromoethane (EDB) | 1 U | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279D003 | FD | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | 1,2-Dichlorobenzene | 1 U | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279D003 | FD | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | 1,2-Dichloroethane | 1 U | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279D003 | FD | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | 1,2-Dichloropropane | 1 U | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279D003 | FD | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | 1,3,5-Trimethylbenzene | 1 U | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279D003 | FD | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | 1,3-Dichlorobenzene | 1 U | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279D003 | FD | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | 1,3-Dichloropropane | 1 U | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279D003 | FD | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | 1,4-Dichlorobenzene | 1 U | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279D003 | FD | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | 2,2-Dichloropropane | 2.1 U | 2.1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279D003 | FD | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | 2-Butanone (MEK) | 5.2 U | 5.2 | 21 | 20 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279D003 | FD | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | 2-Chloro-1,1,1-trifluoroethane | 2.1 U | 2.1 | 10 | 10 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279D003 | FD | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | 2-Chloroethyl vinyl ether | 2.1 U | 2.1 | 10 | 10 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279D003 | FD | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | 2-Chlorotoluene | 1 U | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279D003 | FD | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | 2-Hexanone | 5.2 U | 5.2 | 10 | 10 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279D003 | FD | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | 4-Chlorotoluene | 1 U | 1 | 10 | 10 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279D003 | FD | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | 4-Methyl-2-pentanone (MIBK) | 5.2 U | 5.2 | 10 | 10 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279D003 | FD | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | Acetone | 5.2 U | 5.2 | 21 | 20 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279D003 | FD | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | Benzene | 1 U | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279D003 | FD | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | Bromobenzene | 1 U | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279D003 | FD | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | Bromochloromethane | 1 U | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279D003 | FD | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | Bromodichloromethane | 1 U | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279D003 | FD | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | Bromoform | 2.1 U | 2.1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279D003 | FD | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | Bromomethane | 2.1 U | 2.1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279D003 | FD | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | Carbon tetrachloride | 1 U | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279D003 | FD | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | Chlorobenzene | 1 U | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279D003 | FD | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | Chloroethane | 2.1 U | 2.1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279D003 | FD | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | Chloromethane | 2.1 U | 2.1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279D003 | FD | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | Chlorotrifluoroethylene | 2.1 U | 2.1 | 10 | 10 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279D003 | FD | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | cis-1,2-Dichloroethene | 1 U | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279D003 | FD | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | cis-1,3-Dichloropropene | 1 U | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279D003 | FD | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | Dibromochloromethane | 1 U | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279D003 | FD | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | Dibromomethane | 1 U | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279D003 | FD | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | Dichlorodifluoromethane | 2.1 U | 2.1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279D003 | FD | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | Ethylbenzene | 1 U | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279D003 | FD | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | Hexachlorobutadiene | 2.1 U | 2.1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279D003 | FD | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | Isopropylbenzene | 1 U | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279D003 | FD | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | m,p-Xylenes | 2.1 U | 2.1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279D003 | FD | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | Methylene chloride | 2.1 U | 2.1 | 10 | 10 | µg/kg | | N |

APPENDIX D-1

**Test Stand Biovent Analytical Data**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | FSP SL | Units | FSP Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1279 | BVBS1279D003 | FD | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | Methyl-tert-butyl Ether (MTBE) | 1 U | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279D003 | FD | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | n-butylbenzene | 1 U | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279D003 | FD | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | n-Propylbenzene | 1 U | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279D003 | FD | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | o-Xylene | 1 U | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279D003 | FD | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | p-Isopropyltoluene | 1 U | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279D003 | FD | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | sec-Butylbenzene | 1 U | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279D003 | FD | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | Styrene | 1 U | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279D003 | FD | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | tert-Butylbenzene | 1 U | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279D003 | FD | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | Tetrachloroethene | 1 U | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279D003 | FD | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | Toluene | 1 U | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279D003 | FD | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | trans-1,2-Dichloroethene | 1 U | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279D003 | FD | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | trans-1,3-Dichloropropene | 1 U | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279D003 | FD | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | Trichloroethene | 1.1 J | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279D003 | FD | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | Trichlorofluoromethane | 2.1 U | 2.1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279D003 | FD | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | Trichloromethane (Chloroform) | 1 U | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279D003 | FD | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | Vinyl chloride | 2.1 U | 2.1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S001 | N | 16 Jul 2014 | 2 - 3 | SW9045D | GENCHEM | pH | 8.43 = | | | | PH UNITS | | NC |
| SO | BVBS1279 | BVBS1279S001 | N | 16 Jul 2014 | 2 - 3 | Walkley-Black | GENCHEM | Total Organic Carbon | 1200 = | 650 | 650 | | mg/kg | | NC |
| SO | BVBS1279 | BVBS1279S001 | N | 16 Jul 2014 | 2 - 3 | M8015D | HC | Diesel Range Organics (C12-C14) | 5500 U | 2700 | 5500 | 5000 | µg/kg | X | N |
| SO | BVBS1279 | BVBS1279S001 | N | 16 Jul 2014 | 2 - 3 | M8015D | HC | Diesel Range Organics (C15-C20) | 5500 U | 2700 | 5500 | 5000 | µg/kg | X | N |
| SO | BVBS1279 | BVBS1279S001 | N | 16 Jul 2014 | 2 - 3 | M8015D | HC | Diesel Range Organics (C21-C30) | 10000 = | 2700 | 5500 | 5000 | µg/kg | X | Y |
| SO | BVBS1279 | BVBS1279S001 | N | 16 Jul 2014 | 2 - 3 | M8015D | HC | Diesel Range Organics (C8-C11) | 5500 U | 2700 | 5500 | 1000 | µg/kg | X | RL |
| SO | BVBS1279 | BVBS1279S001 | N | 16 Jul 2014 | 2 - 3 | SW8015B | HC | GRO (C6-C12) | 1100 U | 570 | 1100 | 1000 | µg/kg | X | N |
| SO | BVBS1279 | BVBS1279S001 | N | 16 Jul 2014 | 2 - 3 | M8015D | HC | ORO (C31-C40) | 7900 J | 5500 | 11000 | 10000 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S001 | N | 16 Jul 2014 | 2 - 3 | M8015D | HC | TOTAL EFH(C8-C40) | 19000 = | 2700 | 5500 | 10000 | µg/kg | X | Y |
| SO | BVBS1279 | BVBS1279S001 | N | 16 Jul 2014 | 2 - 3 | SW8270C-SIM | PAH | 1-Methylnaphthalene | 33 U | 16 | 33 | 2.5 | µg/kg | X | RL |
| SO | BVBS1279 | BVBS1279S001 | N | 16 Jul 2014 | 2 - 3 | SW8270C-SIM | PAH | 2-Methylnaphthalene | 33 U | 16 | 33 | 2.5 | µg/kg | X | RL |
| SO | BVBS1279 | BVBS1279S001 | N | 16 Jul 2014 | 2 - 3 | SW8270C-SIM | PAH | Acenaphthene | 33 U | 16 | 33 | 2.5 | µg/kg | X | RL |
| SO | BVBS1279 | BVBS1279S001 | N | 16 Jul 2014 | 2 - 3 | SW8270C-SIM | PAH | Acenaphthylene | 33 U | 16 | 33 | 2.5 | µg/kg | X | RL |
| SO | BVBS1279 | BVBS1279S001 | N | 16 Jul 2014 | 2 - 3 | SW8270C-SIM | PAH | Anthracene | 33 U | 16 | 33 | 2.5 | µg/kg | X | RL |
| SO | BVBS1279 | BVBS1279S001 | N | 16 Jul 2014 | 2 - 3 | SW8270C-SIM | PAH | Benzo(a)anthracene | 30 J | 16 | 33 | | µg/kg | | NC |
| SO | BVBS1279 | BVBS1279S001 | N | 16 Jul 2014 | 2 - 3 | SW8270C-SIM | PAH | Benzo(a)pyrene | 33 U | 16 | 33 | | µg/kg | | NC |
| SO | BVBS1279 | BVBS1279S001 | N | 16 Jul 2014 | 2 - 3 | SW8270C-SIM | PAH | Benzo(b)fluoranthene | 33 U | 16 | 33 | | µg/kg | | NC |
| SO | BVBS1279 | BVBS1279S001 | N | 16 Jul 2014 | 2 - 3 | SW8270C-SIM | PAH | Benzo(ghi)perylene | 19 J | 16 | 33 | 2.5 | µg/kg | X | Y |
| SO | BVBS1279 | BVBS1279S001 | N | 16 Jul 2014 | 2 - 3 | SW8270C-SIM | PAH | Benzo(k)fluoranthene | 33 U | 16 | 33 | | µg/kg | | NC |
| SO | BVBS1279 | BVBS1279S001 | N | 16 Jul 2014 | 2 - 3 | SW8270C-SIM | PAH | Chrysene | 33 U | 16 | 33 | | µg/kg | | NC |
| SO | BVBS1279 | BVBS1279S001 | N | 16 Jul 2014 | 2 - 3 | SW8270C-SIM | PAH | Dibenzo(a,h)anthracene | 33 U | 16 | 33 | | µg/kg | | NC |
| SO | BVBS1279 | BVBS1279S001 | N | 16 Jul 2014 | 2 - 3 | SW8270C-SIM | PAH | Fluoranthene | 33 U | 16 | 33 | 5.2 | µg/kg | X | RL |

APPENDIX D-1

**Test Stand Biovent Analytical Data**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | FSP SL | Units | FSP Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1279 | BVBS1279S001 | N | 16 Jul 2014 | 2 - 3 | SW8270C-SIM | PAH | Fluorene | 33 U | 16 | 33 | 3.8 | µg/kg | X | RL |
| SO | BVBS1279 | BVBS1279S001 | N | 16 Jul 2014 | 2 - 3 | SW8270C-SIM | PAH | Indeno(1,2,3-cd)pyrene | 33 U | 16 | 33 | | µg/kg | | NC |
| SO | BVBS1279 | BVBS1279S001 | N | 16 Jul 2014 | 2 - 3 | SW8270C-SIM | PAH | Naphthalene | 33 U | 16 | 33 | 3.6 | µg/kg | X | RL |
| SO | BVBS1279 | BVBS1279S001 | N | 16 Jul 2014 | 2 - 3 | SW8270C-SIM | PAH | PAHTEQM | 3 = | | | 4.47 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S001 | N | 16 Jul 2014 | 2 - 3 | SW8270C-SIM | PAH | Phenanthrene | 33 U | 16 | 33 | 3.9 | µg/kg | X | RL |
| SO | BVBS1279 | BVBS1279S001 | N | 16 Jul 2014 | 2 - 3 | SW8270C-SIM | PAH | Pyrene | 33 U | 16 | 33 | 5.6 | µg/kg | X | RL |
| SO | BVBS1279 | BVBS1279S001 | N | 16 Jul 2014 | 2 - 3 | SW8270C-SIM | PHTH | Bis(2-ethylhexyl)phthalate | 66 U | 33 | 66 | 61 | µg/kg | X | N |
| SO | BVBS1279 | BVBS1279S001 | N | 16 Jul 2014 | 2 - 3 | SW8270C-SIM | PHTH | Butyl benzyl phthalate | 66 U | 33 | 66 | 100 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S001 | N | 16 Jul 2014 | 2 - 3 | SW8270C-SIM | PHTH | Diethyl phthalate | 66 U | 33 | 66 | 27 | µg/kg | X | RL |
| SO | BVBS1279 | BVBS1279S001 | N | 16 Jul 2014 | 2 - 3 | SW8270C-SIM | PHTH | Dimethyl phthalate | 66 U | 33 | 66 | 27 | µg/kg | X | RL |
| SO | BVBS1279 | BVBS1279S001 | N | 16 Jul 2014 | 2 - 3 | SW8270C-SIM | PHTH | Di-n-butyl phthalate | 66 U | 33 | 66 | 27 | µg/kg | X | RL |
| SO | BVBS1279 | BVBS1279S001 | N | 16 Jul 2014 | 2 - 3 | SW8270C-SIM | PHTH | Di-n-octyl phthalate | 66 U | 33 | 66 | 27 | µg/kg | X | RL |
| SO | BVBS1279 | BVBS1279S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | SVOC | Diisopropyl ether | 0.97 U | 0.97 | 9.7 | 10 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S001 | N | 16 Jul 2014 | 2 - 3 | SW8270C-SIM | SVOC | n-Nitrosodimethylamine | 66 U | 33 | 66 | 10 | µg/kg | X | RL |
| SO | BVBS1279 | BVBS1279S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | SVOC | tert-Amyl methyl ether | 0.97 U | 0.97 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | SVOC | tert-Butyl alcohol | 9.7 U | 9.7 | 49 | 50 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | SVOC | tert-Butyl ethyl ether | 0.97 U | 0.97 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | 1,1,1,2-Tetrachloroethane | 0.97 U | 0.97 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | 1,1,1-Trichloroethane | 0.97 U | 0.97 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | 1,1,2,2-Tetrachloroethane | 0.97 U | 0.97 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | 1,1,2-Trichloro-1,2,2-trifluoroethane | 1.9 U | 1.9 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | 1,1,2-Trichloroethane | 0.97 U | 0.97 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | 1,1-Dichloroethane | 0.97 U | 0.97 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | 1,1-Dichloroethene | 0.97 U | 0.97 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | 1,1-Dichloropropene | 0.97 U | 0.97 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | 1,2,3-Trichlorobenzene | 1.9 U | 1.9 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | 1,2,3-Trichloropropane | 1.9 U | 1.9 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | 1,2,4-Trichlorobenzene | 1.9 U | 1.9 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | 1,2,4-Trimethylbenzene | 0.97 U | 0.97 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | 1,2-Dibromo-3-chloropropane | 1.9 U | 1.9 | 9.7 | 10 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | 1,2-Dibromoethane (EDB) | 0.97 U | 0.97 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | 1,2-Dichlorobenzene | 0.97 U | 0.97 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | 1,2-Dichloroethane | 0.97 U | 0.97 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | 1,2-Dichloropropane | 0.97 U | 0.97 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | 1,3,5-Trimethylbenzene | 0.97 U | 0.97 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | 1,3-Dichlorobenzene | 0.97 U | 0.97 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | 1,3-Dichloropropane | 0.97 U | 0.97 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | 1,4-Dichlorobenzene | 0.97 U | 0.97 | 4.9 | 5 | µg/kg | | N |

APPENDIX D-1

**Test Stand Biovent Analytical Data**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | FSP SL | Units | FSP Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1279 | BVBS1279S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | 2,2-Dichloropropane | 1.9 U | 1.9 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | 2-Butanone (MEK) | 4.9 U | 4.9 | 19 | 20 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | 2-Chloro-1,1,1-trifluoroethane | 1.9 U | 1.9 | 9.7 | 10 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | 2-Chloroethyl vinyl ether | 1.9 U | 1.9 | 9.7 | 10 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | 2-Chlorotoluene | 0.97 U | 0.97 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | 2-Hexanone | 4.9 U | 4.9 | 9.7 | 10 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | 4-Chlorotoluene | 0.97 U | 0.97 | 9.7 | 10 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | 4-Methyl-2-pentanone (MIBK) | 4.9 U | 4.9 | 9.7 | 10 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | Acetone | 4.9 U | 4.9 | 19 | 20 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | Benzene | 0.97 U | 0.97 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | Bromobenzene | 0.97 U | 0.97 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | Bromochloromethane | 0.97 U | 0.97 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | Bromodichloromethane | 0.97 U | 0.97 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | Bromoform | 1.9 U | 1.9 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | Bromomethane | 1.9 U | 1.9 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | Carbon tetrachloride | 0.97 U | 0.97 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | Chlorobenzene | 0.97 U | 0.97 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | Chloroethane | 1.9 U | 1.9 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | Chloromethane | 1.9 U | 1.9 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | Chlorotrifluoroethylene | 1.9 U | 1.9 | 9.7 | 10 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | cis-1,2-Dichloroethene | 0.97 U | 0.97 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | cis-1,3-Dichloropropene | 0.97 U | 0.97 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | Dibromochloromethane | 0.97 U | 0.97 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | Dibromomethane | 0.97 U | 0.97 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | Dichlorodifluoromethane | 1.9 U | 1.9 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | Ethylbenzene | 0.97 U | 0.97 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | Hexachlorobutadiene | 1.9 U | 1.9 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | Isopropylbenzene | 0.97 U | 0.97 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | m,p-Xylenes | 1.9 U | 1.9 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | Methylene chloride | 2 J | 1.9 | 9.7 | 10 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | Methyl-tert-butyl Ether (MTBE) | 0.97 U | 0.97 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | n-butylbenzene | 0.97 U | 0.97 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | n-Propylbenzene | 0.97 U | 0.97 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | o-Xylene | 0.97 U | 0.97 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | p-Isopropyltoluene | 0.97 U | 0.97 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | sec-Butylbenzene | 0.97 U | 0.97 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | Styrene | 0.97 U | 0.97 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | tert-Butylbenzene | 0.97 U | 0.97 | 4.9 | 5 | µg/kg | | N |

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**Test Stand Biovent Analytical Data**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | FSP SL | Units | FSP Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1279 | BVBS1279S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | Tetrachloroethene | 0.97 U | 0.97 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | Toluene | 0.97 U | 0.97 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | trans-1,2-Dichloroethene | 0.97 U | 0.97 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | trans-1,3-Dichloropropene | 0.97 U | 0.97 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | Trichloroethene | 7.7 = | 0.97 | 4.9 | 5 | µg/kg | X | Y |
| SO | BVBS1279 | BVBS1279S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | Trichlorofluoromethane | 1.9 U | 1.9 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | Trichloromethane (Chloroform) | 0.97 U | 0.97 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S001 | N | 16 Jul 2014 | 2 - 3 | SW8260B | VOC | Vinyl chloride | 1.9 U | 1.9 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S002 | N | 16 Jul 2014 | 5 - 6 | SW9045D | GENCHEM | pH | 7.98 = | | | | PH UNITS | | NC |
| SO | BVBS1279 | BVBS1279S002 | N | 16 Jul 2014 | 5 - 6 | Walkley-Black | GENCHEM | Total Organic Carbon | 879 = | 639 | 639 | | mg/kg | | NC |
| SO | BVBS1279 | BVBS1279S002 | N | 16 Jul 2014 | 5 - 6 | M8015D | HC | Diesel Range Organics (C12-C14) | 5400 U | 2700 | 5400 | 5000 | µg/kg | X | N |
| SO | BVBS1279 | BVBS1279S002 | N | 16 Jul 2014 | 5 - 6 | M8015D | HC | Diesel Range Organics (C15-C20) | 5400 U | 2700 | 5400 | 5000 | µg/kg | X | N |
| SO | BVBS1279 | BVBS1279S002 | N | 16 Jul 2014 | 5 - 6 | M8015D | HC | Diesel Range Organics (C21-C30) | 5400 U | 2700 | 5400 | 5000 | µg/kg | X | N |
| SO | BVBS1279 | BVBS1279S002 | N | 16 Jul 2014 | 5 - 6 | M8015D | HC | Diesel Range Organics (C8-C11) | 5400 U | 2700 | 5400 | 1000 | µg/kg | X | RL |
| SO | BVBS1279 | BVBS1279S002 | N | 16 Jul 2014 | 5 - 6 | SW8015B | HC | GRO (C6-C12) | 1200 U | 580 | 1200 | 1000 | µg/kg | X | N |
| SO | BVBS1279 | BVBS1279S002 | N | 16 Jul 2014 | 5 - 6 | M8015D | HC | ORO (C31-C40) | 11000 U | 5400 | 11000 | 10000 | µg/kg | X | N |
| SO | BVBS1279 | BVBS1279S002 | N | 16 Jul 2014 | 5 - 6 | M8015D | HC | TOTAL EFH(C8-C40) | 5400 U | 2700 | 5400 | 10000 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S002 | N | 16 Jul 2014 | 5 - 6 | SW8270C-SIM | PAH | 1-Methylnaphthalene | 11 U | 5.4 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1279 | BVBS1279S002 | N | 16 Jul 2014 | 5 - 6 | SW8270C-SIM | PAH | 2-Methylnaphthalene | 11 U | 5.4 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1279 | BVBS1279S002 | N | 16 Jul 2014 | 5 - 6 | SW8270C-SIM | PAH | Acenaphthene | 11 U | 5.4 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1279 | BVBS1279S002 | N | 16 Jul 2014 | 5 - 6 | SW8270C-SIM | PAH | Acenaphthylene | 11 U | 5.4 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1279 | BVBS1279S002 | N | 16 Jul 2014 | 5 - 6 | SW8270C-SIM | PAH | Anthracene | 11 U | 5.4 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1279 | BVBS1279S002 | N | 16 Jul 2014 | 5 - 6 | SW8270C-SIM | PAH | Benzo(a)anthracene | 11 U | 5.4 | 11 | | µg/kg | | NC |
| SO | BVBS1279 | BVBS1279S002 | N | 16 Jul 2014 | 5 - 6 | SW8270C-SIM | PAH | Benzo(a)pyrene | 11 U | 5.4 | 11 | | µg/kg | | NC |
| SO | BVBS1279 | BVBS1279S002 | N | 16 Jul 2014 | 5 - 6 | SW8270C-SIM | PAH | Benzo(b)fluoranthene | 11 U | 5.4 | 11 | | µg/kg | | NC |
| SO | BVBS1279 | BVBS1279S002 | N | 16 Jul 2014 | 5 - 6 | SW8270C-SIM | PAH | Benzo(ghi)perylene | 11 U | 5.4 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1279 | BVBS1279S002 | N | 16 Jul 2014 | 5 - 6 | SW8270C-SIM | PAH | Benzo(k)fluoranthene | 11 U | 5.4 | 11 | | µg/kg | | NC |
| SO | BVBS1279 | BVBS1279S002 | N | 16 Jul 2014 | 5 - 6 | SW8270C-SIM | PAH | Chrysene | 11 U | 5.4 | 11 | | µg/kg | | NC |
| SO | BVBS1279 | BVBS1279S002 | N | 16 Jul 2014 | 5 - 6 | SW8270C-SIM | PAH | Dibenzo(a,h)anthracene | 11 U | 5.4 | 11 | | µg/kg | | NC |
| SO | BVBS1279 | BVBS1279S002 | N | 16 Jul 2014 | 5 - 6 | SW8270C-SIM | PAH | Fluoranthene | 11 U | 5.4 | 11 | 5.2 | µg/kg | X | RL |
| SO | BVBS1279 | BVBS1279S002 | N | 16 Jul 2014 | 5 - 6 | SW8270C-SIM | PAH | Fluorene | 11 U | 5.4 | 11 | 3.8 | µg/kg | X | RL |
| SO | BVBS1279 | BVBS1279S002 | N | 16 Jul 2014 | 5 - 6 | SW8270C-SIM | PAH | Indeno(1,2,3-cd)pyrene | 11 U | 5.4 | 11 | | µg/kg | | NC |
| SO | BVBS1279 | BVBS1279S002 | N | 16 Jul 2014 | 5 - 6 | SW8270C-SIM | PAH | Naphthalene | 11 U | 5.4 | 11 | 3.6 | µg/kg | X | RL |
| SO | BVBS1279 | BVBS1279S002 | N | 16 Jul 2014 | 5 - 6 | SW8270C-SIM | PAH | PAHTEQM | 0 U | | | 4.47 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S002 | N | 16 Jul 2014 | 5 - 6 | SW8270C-SIM | PAH | Phenanthrene | 11 U | 5.4 | 11 | 3.9 | µg/kg | X | RL |
| SO | BVBS1279 | BVBS1279S002 | N | 16 Jul 2014 | 5 - 6 | SW8270C-SIM | PAH | Pyrene | 11 U | 5.4 | 11 | 5.6 | µg/kg | X | N |
| SO | BVBS1279 | BVBS1279S002 | N | 16 Jul 2014 | 5 - 6 | SW8270C-SIM | PHTH | Bis(2-ethylhexyl)phthalate | 22 U | 11 | 22 | 61 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S002 | N | 16 Jul 2014 | 5 - 6 | SW8270C-SIM | PHTH | Butyl benzyl phthalate | 22 U | 11 | 22 | 100 | µg/kg | | N |

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**Test Stand Biovent Analytical Data**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | FSP SL | Units | FSP Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1279 | BVBS1279S002 | N | 16 Jul 2014 | 5 - 6 | SW8270C-SIM | PHTH | Diethyl phthalate | 22 U | 11 | 22 | 27 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S002 | N | 16 Jul 2014 | 5 - 6 | SW8270C-SIM | PHTH | Dimethyl phthalate | 22 U | 11 | 22 | 27 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S002 | N | 16 Jul 2014 | 5 - 6 | SW8270C-SIM | PHTH | Di-n-butyl phthalate | 22 U | 11 | 22 | 27 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S002 | N | 16 Jul 2014 | 5 - 6 | SW8270C-SIM | PHTH | Di-n-octyl phthalate | 22 U | 11 | 22 | 27 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | SVOC | Diisopropyl ether | 1.1 U | 1.1 | 11 | 10 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S002 | N | 16 Jul 2014 | 5 - 6 | SW8270C-SIM | SVOC | n-Nitrosodimethylamine | 22 U | 11 | 22 | 10 | µg/kg | X | RL |
| SO | BVBS1279 | BVBS1279S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | SVOC | tert-Amyl methyl ether | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | SVOC | tert-Butyl alcohol | 11 U | 11 | 57 | 50 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | SVOC | tert-Butyl ethyl ether | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | 1,1,1,2-Tetrachloroethane | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | 1,1,1-Trichloroethane | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | 1,1,2,2-Tetrachloroethane | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | 1,1,2-Trichloro-1,2,2-trifluoroethane | 2.3 U | 2.3 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | 1,1,2-Trichloroethane | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | 1,1-Dichloroethane | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | 1,1-Dichloroethene | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | 1,1-Dichloropropene | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | 1,2,3-Trichlorobenzene | 2.3 U | 2.3 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | 1,2,3-Trichloropropane | 2.3 U | 2.3 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | 1,2,4-Trichlorobenzene | 2.3 U | 2.3 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | 1,2,4-Trimethylbenzene | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | 1,2-Dibromo-3-chloropropane | 2.3 U | 2.3 | 11 | 10 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | 1,2-Dibromoethane (EDB) | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | 1,2-Dichlorobenzene | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | 1,2-Dichloroethane | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | 1,2-Dichloropropane | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | 1,3,5-Trimethylbenzene | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | 1,3-Dichlorobenzene | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | 1,3-Dichloropropane | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | 1,4-Dichlorobenzene | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | 2,2-Dichloropropane | 2.3 U | 2.3 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | 2-Butanone (MEK) | 5.7 U | 5.7 | 23 | 20 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | 2-Chloro-1,1,1-trifluoroethane | 2.3 U | 2.3 | 11 | 10 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | 2-Chloroethyl vinyl ether | 2.3 U | 2.3 | 11 | 10 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | 2-Chlorotoluene | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | 2-Hexanone | 5.7 U | 5.7 | 11 | 10 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | 4-Chlorotoluene | 1.1 U | 1.1 | 11 | 10 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | 4-Methyl-2-pentanone (MIBK) | 5.7 U | 5.7 | 11 | 10 | µg/kg | | N |

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**Test Stand Biovent Analytical Data**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | FSP SL | Units | FSP Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1279 | BVBS1279S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | Acetone | 5.7 U | 5.7 | 23 | 20 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | Benzene | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | Bromobenzene | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | Bromochloromethane | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | Bromodichloromethane | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | Bromoform | 2.3 U | 2.3 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | Bromomethane | 2.3 U | 2.3 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | Carbon tetrachloride | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | Chlorobenzene | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | Chloroethane | 2.3 U | 2.3 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | Chloromethane | 2.3 U | 2.3 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | Chlorotrifluoroethylene | 2.3 U | 2.3 | 11 | 10 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | cis-1,2-Dichloroethene | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | cis-1,3-Dichloropropene | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | Dibromochloromethane | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | Dibromomethane | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | Dichlorodifluoromethane | 2.3 U | 2.3 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | Ethylbenzene | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | Hexachlorobutadiene | 2.3 U | 2.3 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | Isopropylbenzene | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | m,p-Xylenes | 2.3 U | 2.3 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | Methylene chloride | 2.3 U | 2.3 | 11 | 10 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | Methyl-tert-butyl Ether (MTBE) | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | n-butylbenzene | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | n-Propylbenzene | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | o-Xylene | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | p-Isopropyltoluene | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | sec-Butylbenzene | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | Styrene | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | tert-Butylbenzene | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | Tetrachloroethene | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | Toluene | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | trans-1,2-Dichloroethene | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | trans-1,3-Dichloropropene | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | Trichloroethene | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | Trichlorofluoromethane | 2.3 U | 2.3 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | Trichloromethane (Chloroform) | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S002 | N | 16 Jul 2014 | 5 - 6 | SW8260B | VOC | Vinyl chloride | 2.3 U | 2.3 | 5.7 | 5 | µg/kg | | N |

APPENDIX D-1

**Test Stand Biovent Analytical Data**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | FSP SL | Units | FSP Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1279 | BVBS1279S003 | N | 11 Sep 2014 | 2 - 3 | SW9045D | GENCHEM | pH | 8.62 = | | | | PH UNITS | | NC |
| SO | BVBS1279 | BVBS1279S003 | N | 11 Sep 2014 | 2 - 3 | Walkley-Black | GENCHEM | Total Organic Carbon | 648 U | 648 | 648 | | mg/kg | | NC |
| SO | BVBS1279 | BVBS1279S003 | N | 11 Sep 2014 | 2 - 3 | M8015D | HC | Diesel Range Organics (C12-C14) | 5400 U | 2700 | 5400 | 5000 | µg/kg | X | N |
| SO | BVBS1279 | BVBS1279S003 | N | 11 Sep 2014 | 2 - 3 | M8015D | HC | Diesel Range Organics (C15-C20) | 5400 U | 2700 | 5400 | 5000 | µg/kg | X | N |
| SO | BVBS1279 | BVBS1279S003 | N | 11 Sep 2014 | 2 - 3 | M8015D | HC | Diesel Range Organics (C21-C30) | 11000 J | 2700 | 5400 | 5000 | µg/kg | X | Y |
| SO | BVBS1279 | BVBS1279S003 | N | 11 Sep 2014 | 2 - 3 | M8015D | HC | Diesel Range Organics (C8-C11) | 5400 U | 2700 | 5400 | 1000 | µg/kg | X | RL |
| SO | BVBS1279 | BVBS1279S003 | N | 11 Sep 2014 | 2 - 3 | SW8015B | HC | GRO (C6-C12) | 1100 U | 530 | 1100 | 1000 | µg/kg | X | N |
| SO | BVBS1279 | BVBS1279S003 | N | 11 Sep 2014 | 2 - 3 | M8015D | HC | ORO (C31-C40) | 11000 U | 5400 | 11000 | 10000 | µg/kg | X | N |
| SO | BVBS1279 | BVBS1279S003 | N | 11 Sep 2014 | 2 - 3 | M8015D | HC | TOTAL EFH(C8-C40) | 18000 J | 2700 | 5400 | 10000 | µg/kg | X | Y |
| SO | BVBS1279 | BVBS1279S003 | N | 11 Sep 2014 | 2 - 3 | SW8270C-SIM | PAH | 1-Methylnaphthalene | 11 U | 5.4 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1279 | BVBS1279S003 | N | 11 Sep 2014 | 2 - 3 | SW8270C-SIM | PAH | 2-Methylnaphthalene | 11 U | 5.4 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1279 | BVBS1279S003 | N | 11 Sep 2014 | 2 - 3 | SW8270C-SIM | PAH | Acenaphthene | 11 U | 5.4 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1279 | BVBS1279S003 | N | 11 Sep 2014 | 2 - 3 | SW8270C-SIM | PAH | Acenaphthylene | 11 U | 5.4 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1279 | BVBS1279S003 | N | 11 Sep 2014 | 2 - 3 | SW8270C-SIM | PAH | Anthracene | 11 U | 5.4 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1279 | BVBS1279S003 | N | 11 Sep 2014 | 2 - 3 | SW8270C-SIM | PAH | Benzo(a)anthracene | 11 U | 5.4 | 11 | | µg/kg | | NC |
| SO | BVBS1279 | BVBS1279S003 | N | 11 Sep 2014 | 2 - 3 | SW8270C-SIM | PAH | Benzo(a)pyrene | 7 J | 5.4 | 11 | | µg/kg | | NC |
| SO | BVBS1279 | BVBS1279S003 | N | 11 Sep 2014 | 2 - 3 | SW8270C-SIM | PAH | Benzo(b)fluoranthene | 8.2 J | 5.4 | 11 | | µg/kg | | NC |
| SO | BVBS1279 | BVBS1279S003 | N | 11 Sep 2014 | 2 - 3 | SW8270C-SIM | PAH | Benzo(ghi)perylene | 11 U | 5.4 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1279 | BVBS1279S003 | N | 11 Sep 2014 | 2 - 3 | SW8270C-SIM | PAH | Benzo(k)fluoranthene | 11 U | 5.4 | 11 | | µg/kg | | NC |
| SO | BVBS1279 | BVBS1279S003 | N | 11 Sep 2014 | 2 - 3 | SW8270C-SIM | PAH | Chrysene | 11 U | 5.4 | 11 | | µg/kg | | NC |
| SO | BVBS1279 | BVBS1279S003 | N | 11 Sep 2014 | 2 - 3 | SW8270C-SIM | PAH | Dibenzo(a,h)anthracene | 11 U | 5.4 | 11 | | µg/kg | | NC |
| SO | BVBS1279 | BVBS1279S003 | N | 11 Sep 2014 | 2 - 3 | SW8270C-SIM | PAH | Fluoranthene | 11 U | 5.4 | 11 | 5.2 | µg/kg | X | RL |
| SO | BVBS1279 | BVBS1279S003 | N | 11 Sep 2014 | 2 - 3 | SW8270C-SIM | PAH | Fluorene | 11 U | 5.4 | 11 | 3.8 | µg/kg | X | RL |
| SO | BVBS1279 | BVBS1279S003 | N | 11 Sep 2014 | 2 - 3 | SW8270C-SIM | PAH | Indeno(1,2,3-cd)pyrene | 11 U | 5.4 | 11 | | µg/kg | | NC |
| SO | BVBS1279 | BVBS1279S003 | N | 11 Sep 2014 | 2 - 3 | SW8270C-SIM | PAH | Naphthalene | 11 U | 5.4 | 11 | 3.6 | µg/kg | X | RL |
| SO | BVBS1279 | BVBS1279S003 | N | 11 Sep 2014 | 2 - 3 | SW8270C-SIM | PAH | PAHTEQM | 7.82 = | | | 4.47 | µg/kg | X | Y |
| SO | BVBS1279 | BVBS1279S003 | N | 11 Sep 2014 | 2 - 3 | SW8270C-SIM | PAH | Phenanthrene | 11 U | 5.4 | 11 | 3.9 | µg/kg | X | RL |
| SO | BVBS1279 | BVBS1279S003 | N | 11 Sep 2014 | 2 - 3 | SW8270C-SIM | PAH | Pyrene | 11 U | 5.4 | 11 | 5.6 | µg/kg | X | N |
| SO | BVBS1279 | BVBS1279S003 | N | 11 Sep 2014 | 2 - 3 | SW8270C-SIM | PHTH | Bis(2-ethylhexyl)phthalate | 22 U | 11 | 22 | 61 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S003 | N | 11 Sep 2014 | 2 - 3 | SW8270C-SIM | PHTH | Butyl benzyl phthalate | 22 U | 11 | 22 | 100 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S003 | N | 11 Sep 2014 | 2 - 3 | SW8270C-SIM | PHTH | Diethyl phthalate | 22 U | 11 | 22 | 27 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S003 | N | 11 Sep 2014 | 2 - 3 | SW8270C-SIM | PHTH | Dimethyl phthalate | 22 U | 11 | 22 | 27 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S003 | N | 11 Sep 2014 | 2 - 3 | SW8270C-SIM | PHTH | Di-n-butyl phthalate | 22 U | 11 | 22 | 27 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S003 | N | 11 Sep 2014 | 2 - 3 | SW8270C-SIM | PHTH | Di-n-octyl phthalate | 22 U | 11 | 22 | 27 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | SVOC | Diisopropyl ether | 1.2 U | 1.2 | 12 | 10 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S003 | N | 11 Sep 2014 | 2 - 3 | SW8270C-SIM | SVOC | n-Nitrosodimethylamine | 22 U | 11 | 22 | 10 | µg/kg | X | RL |
| SO | BVBS1279 | BVBS1279S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | SVOC | tert-Amyl methyl ether | 1.2 U | 1.2 | 5.8 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | SVOC | tert-Butyl alcohol | 12 U | 12 | 58 | 50 | µg/kg | | N |

APPENDIX D-1

**Test Stand Biovent Analytical Data**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | FSP SL | Units | FSP Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1279 | BVBS1279S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | SVOC | tert-Butyl ethyl ether | 1.2 U | 1.2 | 5.8 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | 1,1,1,2-Tetrachloroethane | 1.2 U | 1.2 | 5.8 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | 1,1,1-Trichloroethane | 1.2 U | 1.2 | 5.8 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | 1,1,2,2-Tetrachloroethane | 1.2 U | 1.2 | 5.8 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | 1,1,2-Trichloro-1,2,2-trifluoroethane | 2.3 U | 2.3 | 5.8 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | 1,1,2-Trichloroethane | 1.2 U | 1.2 | 5.8 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | 1,1-Dichloroethane | 1.2 U | 1.2 | 5.8 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | 1,1-Dichloroethene | 1.2 U | 1.2 | 5.8 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | 1,1-Dichloropropene | 1.2 U | 1.2 | 5.8 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | 1,2,3-Trichlorobenzene | 2.3 U | 2.3 | 5.8 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | 1,2,3-Trichloropropane | 2.3 U | 2.3 | 5.8 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | 1,2,4-Trichlorobenzene | 2.3 U | 2.3 | 5.8 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | 1,2,4-Trimethylbenzene | 1.2 U | 1.2 | 5.8 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | 1,2-Dibromo-3-chloropropane | 2.3 U | 2.3 | 12 | 10 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | 1,2-Dibromoethane (EDB) | 1.2 U | 1.2 | 5.8 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | 1,2-Dichlorobenzene | 1.2 U | 1.2 | 5.8 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | 1,2-Dichloroethane | 1.2 U | 1.2 | 5.8 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | 1,2-Dichloropropane | 1.2 U | 1.2 | 5.8 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | 1,3,5-Trimethylbenzene | 1.2 U | 1.2 | 5.8 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | 1,3-Dichlorobenzene | 1.2 U | 1.2 | 5.8 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | 1,3-Dichloropropane | 1.2 U | 1.2 | 5.8 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | 1,4-Dichlorobenzene | 1.2 U | 1.2 | 5.8 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | 2,2-Dichloropropane | 2.3 U | 2.3 | 5.8 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | 2-Butanone (MEK) | 5.8 U | 5.8 | 23 | 20 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | 2-Chloro-1,1,1-trifluoroethane | 2.3 U | 2.3 | 12 | 10 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | 2-Chloroethyl vinyl ether | 2.3 U | 2.3 | 12 | 10 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | 2-Chlorotoluene | 1.2 U | 1.2 | 5.8 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | 2-Hexanone | 5.8 U | 5.8 | 12 | 10 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | 4-Chlorotoluene | 1.2 U | 1.2 | 12 | 10 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | 4-Methyl-2-pentanone (MIBK) | 5.8 U | 5.8 | 12 | 10 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | Acetone | 5.8 U | 5.8 | 23 | 20 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | Benzene | 1.2 U | 1.2 | 5.8 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | Bromobenzene | 1.2 U | 1.2 | 5.8 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | Bromochloromethane | 1.2 U | 1.2 | 5.8 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | Bromodichloromethane | 1.2 U | 1.2 | 5.8 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | Bromoform | 2.3 U | 2.3 | 5.8 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | Bromomethane | 2.3 U | 2.3 | 5.8 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | Carbon tetrachloride | 1.2 U | 1.2 | 5.8 | 5 | µg/kg | | N |

APPENDIX D-1

**Test Stand Biovent Analytical Data**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | FSP SL | Units | FSP Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1279 | BVBS1279S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | Chlorobenzene | 1.2 U | 1.2 | 5.8 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | Chloroethane | 2.3 U | 2.3 | 5.8 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | Chloromethane | 2.3 U | 2.3 | 5.8 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | Chlorotrifluoroethylene | 2.3 U | 2.3 | 12 | 10 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | cis-1,2-Dichloroethene | 1.2 U | 1.2 | 5.8 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | cis-1,3-Dichloropropene | 1.2 U | 1.2 | 5.8 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | Dibromochloromethane | 1.2 U | 1.2 | 5.8 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | Dibromomethane | 1.2 U | 1.2 | 5.8 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | Dichlorodifluoromethane | 2.3 U | 2.3 | 5.8 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | Ethylbenzene | 1.2 U | 1.2 | 5.8 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | Hexachlorobutadiene | 2.3 U | 2.3 | 5.8 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | Isopropylbenzene | 1.2 U | 1.2 | 5.8 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | m,p-Xylenes | 2.3 U | 2.3 | 5.8 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | Methylene chloride | 2.3 U | 2.3 | 12 | 10 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | Methyl-tert-butyl Ether (MTBE) | 1.2 U | 1.2 | 5.8 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | n-butylbenzene | 1.2 U | 1.2 | 5.8 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | n-Propylbenzene | 1.2 U | 1.2 | 5.8 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | o-Xylene | 1.2 U | 1.2 | 5.8 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | p-Isopropyltoluene | 1.2 U | 1.2 | 5.8 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | sec-Butylbenzene | 1.2 U | 1.2 | 5.8 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | Styrene | 1.2 U | 1.2 | 5.8 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | tert-Butylbenzene | 1.2 U | 1.2 | 5.8 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | Tetrachloroethene | 1.2 U | 1.2 | 5.8 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | Toluene | 1.2 U | 1.2 | 5.8 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | trans-1,2-Dichloroethene | 1.2 U | 1.2 | 5.8 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | trans-1,3-Dichloropropene | 1.2 U | 1.2 | 5.8 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | Trichloroethene | 3.1 J | 1.2 | 5.8 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | Trichlorofluoromethane | 2.3 U | 2.3 | 5.8 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | Trichloromethane (Chloroform) | 1.2 U | 1.2 | 5.8 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | Vinyl chloride | 2.3 U | 2.3 | 5.8 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S004 | N | 11 Sep 2014 | 5 - 6 | SW9045D | GENCHEM | pH | 7.85 = | | | | PH UNITS | | NC |
| SO | BVBS1279 | BVBS1279S004 | N | 11 Sep 2014 | 5 - 6 | Walkley-Black | GENCHEM | Total Organic Carbon | 617 U | 617 | 617 | | mg/kg | | NC |
| SO | BVBS1279 | BVBS1279S004 | N | 11 Sep 2014 | 5 - 6 | M8015D | HC | Diesel Range Organics (C12-C14) | 5200 U | 2600 | 5200 | 5000 | µg/kg | X | N |
| SO | BVBS1279 | BVBS1279S004 | N | 11 Sep 2014 | 5 - 6 | M8015D | HC | Diesel Range Organics (C15-C20) | 5200 U | 2600 | 5200 | 5000 | µg/kg | X | N |
| SO | BVBS1279 | BVBS1279S004 | N | 11 Sep 2014 | 5 - 6 | M8015D | HC | Diesel Range Organics (C21-C30) | 5200 U | 2600 | 5200 | 5000 | µg/kg | X | N |
| SO | BVBS1279 | BVBS1279S004 | N | 11 Sep 2014 | 5 - 6 | M8015D | HC | Diesel Range Organics (C8-C11) | 5200 U | 2600 | 5200 | 1000 | µg/kg | X | RL |
| SO | BVBS1279 | BVBS1279S004 | N | 11 Sep 2014 | 5 - 6 | SW8015B | HC | GRO (C6-C12) | 1100 U | 540 | 1100 | 1000 | µg/kg | X | N |
| SO | BVBS1279 | BVBS1279S004 | N | 11 Sep 2014 | 5 - 6 | M8015D | HC | ORO (C31-C40) | 10000 U | 5200 | 10000 | 10000 | µg/kg | | N |

APPENDIX D-1

**Test Stand Biovent Analytical Data**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | FSP SL | Units | FSP Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1279 | BVBS1279S004 | N | 11 Sep 2014 | 5 - 6 | M8015D | HC | TOTAL EFH(C8-C40) | 5200 U | 2600 | 5200 | 10000 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S004 | N | 11 Sep 2014 | 5 - 6 | SW8270C-SIM | PAH | 1-Methylnaphthalene | 10 U | 5.2 | 10 | 2.5 | µg/kg | X | RL |
| SO | BVBS1279 | BVBS1279S004 | N | 11 Sep 2014 | 5 - 6 | SW8270C-SIM | PAH | 2-Methylnaphthalene | 10 U | 5.2 | 10 | 2.5 | µg/kg | X | RL |
| SO | BVBS1279 | BVBS1279S004 | N | 11 Sep 2014 | 5 - 6 | SW8270C-SIM | PAH | Acenaphthene | 10 U | 5.2 | 10 | 2.5 | µg/kg | X | RL |
| SO | BVBS1279 | BVBS1279S004 | N | 11 Sep 2014 | 5 - 6 | SW8270C-SIM | PAH | Acenaphthylene | 10 U | 5.2 | 10 | 2.5 | µg/kg | X | RL |
| SO | BVBS1279 | BVBS1279S004 | N | 11 Sep 2014 | 5 - 6 | SW8270C-SIM | PAH | Anthracene | 10 U | 5.2 | 10 | 2.5 | µg/kg | X | RL |
| SO | BVBS1279 | BVBS1279S004 | N | 11 Sep 2014 | 5 - 6 | SW8270C-SIM | PAH | Benzo(a)anthracene | 10 U | 5.2 | 10 | | µg/kg | | NC |
| SO | BVBS1279 | BVBS1279S004 | N | 11 Sep 2014 | 5 - 6 | SW8270C-SIM | PAH | Benzo(a)pyrene | 10 U | 5.2 | 10 | | µg/kg | | NC |
| SO | BVBS1279 | BVBS1279S004 | N | 11 Sep 2014 | 5 - 6 | SW8270C-SIM | PAH | Benzo(b)fluoranthene | 10 U | 5.2 | 10 | | µg/kg | | NC |
| SO | BVBS1279 | BVBS1279S004 | N | 11 Sep 2014 | 5 - 6 | SW8270C-SIM | PAH | Benzo(ghi)perylene | 10 U | 5.2 | 10 | 2.5 | µg/kg | X | RL |
| SO | BVBS1279 | BVBS1279S004 | N | 11 Sep 2014 | 5 - 6 | SW8270C-SIM | PAH | Benzo(k)fluoranthene | 10 U | 5.2 | 10 | | µg/kg | | NC |
| SO | BVBS1279 | BVBS1279S004 | N | 11 Sep 2014 | 5 - 6 | SW8270C-SIM | PAH | Chrysene | 10 U | 5.2 | 10 | | µg/kg | | NC |
| SO | BVBS1279 | BVBS1279S004 | N | 11 Sep 2014 | 5 - 6 | SW8270C-SIM | PAH | Dibenzo(a,h)anthracene | 10 U | 5.2 | 10 | | µg/kg | | NC |
| SO | BVBS1279 | BVBS1279S004 | N | 11 Sep 2014 | 5 - 6 | SW8270C-SIM | PAH | Fluoranthene | 10 U | 5.2 | 10 | 5.2 | µg/kg | X | N |
| SO | BVBS1279 | BVBS1279S004 | N | 11 Sep 2014 | 5 - 6 | SW8270C-SIM | PAH | Fluorene | 10 U | 5.2 | 10 | 3.8 | µg/kg | X | RL |
| SO | BVBS1279 | BVBS1279S004 | N | 11 Sep 2014 | 5 - 6 | SW8270C-SIM | PAH | Indeno(1,2,3-cd)pyrene | 10 U | 5.2 | 10 | | µg/kg | | NC |
| SO | BVBS1279 | BVBS1279S004 | N | 11 Sep 2014 | 5 - 6 | SW8270C-SIM | PAH | Naphthalene | 10 U | 5.2 | 10 | 3.6 | µg/kg | X | RL |
| SO | BVBS1279 | BVBS1279S004 | N | 11 Sep 2014 | 5 - 6 | SW8270C-SIM | PAH | PAHTEQM | 0 U | | | 4.47 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S004 | N | 11 Sep 2014 | 5 - 6 | SW8270C-SIM | PAH | Phenanthrene | 10 U | 5.2 | 10 | 3.9 | µg/kg | X | RL |
| SO | BVBS1279 | BVBS1279S004 | N | 11 Sep 2014 | 5 - 6 | SW8270C-SIM | PAH | Pyrene | 10 U | 5.2 | 10 | 5.6 | µg/kg | X | N |
| SO | BVBS1279 | BVBS1279S004 | N | 11 Sep 2014 | 5 - 6 | SW8270C-SIM | PHTH | Bis(2-ethylhexyl)phthalate | 21 U | 10 | 21 | 61 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S004 | N | 11 Sep 2014 | 5 - 6 | SW8270C-SIM | PHTH | Butyl benzyl phthalate | 21 U | 10 | 21 | 100 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S004 | N | 11 Sep 2014 | 5 - 6 | SW8270C-SIM | PHTH | Diethyl phthalate | 21 U | 10 | 21 | 27 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S004 | N | 11 Sep 2014 | 5 - 6 | SW8270C-SIM | PHTH | Dimethyl phthalate | 21 U | 10 | 21 | 27 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S004 | N | 11 Sep 2014 | 5 - 6 | SW8270C-SIM | PHTH | Di-n-butyl phthalate | 21 U | 10 | 21 | 27 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S004 | N | 11 Sep 2014 | 5 - 6 | SW8270C-SIM | PHTH | Di-n-octyl phthalate | 21 U | 10 | 21 | 27 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S004 | N | 11 Sep 2014 | 5 - 6 | SW8260B | SVOC | Diisopropyl ether | 1.1 U | 1.1 | 11 | 10 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S004 | N | 11 Sep 2014 | 5 - 6 | SW8270C-SIM | SVOC | n-Nitrosodimethylamine | 21 U | 10 | 21 | 10 | µg/kg | X | N |
| SO | BVBS1279 | BVBS1279S004 | N | 11 Sep 2014 | 5 - 6 | SW8260B | SVOC | tert-Amyl methyl ether | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S004 | N | 11 Sep 2014 | 5 - 6 | SW8260B | SVOC | tert-Butyl alcohol | 11 U | 11 | 55 | 50 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S004 | N | 11 Sep 2014 | 5 - 6 | SW8260B | SVOC | tert-Butyl ethyl ether | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S004 | N | 11 Sep 2014 | 5 - 6 | SW8260B | VOC | 1,1,1,2-Tetrachloroethane | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S004 | N | 11 Sep 2014 | 5 - 6 | SW8260B | VOC | 1,1,1-Trichloroethane | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S004 | N | 11 Sep 2014 | 5 - 6 | SW8260B | VOC | 1,1,2,2-Tetrachloroethane | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S004 | N | 11 Sep 2014 | 5 - 6 | SW8260B | VOC | 1,1,2-Trichloro-1,2,2-trifluoroethane | 2.2 U | 2.2 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S004 | N | 11 Sep 2014 | 5 - 6 | SW8260B | VOC | 1,1,2-Trichloroethane | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S004 | N | 11 Sep 2014 | 5 - 6 | SW8260B | VOC | 1,1-Dichloroethane | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S004 | N | 11 Sep 2014 | 5 - 6 | SW8260B | VOC | 1,1-Dichloroethene | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |

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**Test Stand Biovent Analytical Data**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | FSP SL | Units | FSP Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1279 | BVBS1279S004 | N | 11 Sep 2014 | 5 - 6 | SW8260B | VOC | 1,1-Dichloropropene | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S004 | N | 11 Sep 2014 | 5 - 6 | SW8260B | VOC | 1,2,3-Trichlorobenzene | 2.2 U | 2.2 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S004 | N | 11 Sep 2014 | 5 - 6 | SW8260B | VOC | 1,2,3-Trichloropropane | 2.2 U | 2.2 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S004 | N | 11 Sep 2014 | 5 - 6 | SW8260B | VOC | 1,2,4-Trichlorobenzene | 2.2 U | 2.2 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S004 | N | 11 Sep 2014 | 5 - 6 | SW8260B | VOC | 1,2,4-Trimethylbenzene | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S004 | N | 11 Sep 2014 | 5 - 6 | SW8260B | VOC | 1,2-Dibromo-3-chloropropane | 2.2 U | 2.2 | 11 | 10 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S004 | N | 11 Sep 2014 | 5 - 6 | SW8260B | VOC | 1,2-Dibromoethane (EDB) | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S004 | N | 11 Sep 2014 | 5 - 6 | SW8260B | VOC | 1,2-Dichlorobenzene | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S004 | N | 11 Sep 2014 | 5 - 6 | SW8260B | VOC | 1,2-Dichloroethane | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S004 | N | 11 Sep 2014 | 5 - 6 | SW8260B | VOC | 1,2-Dichloropropane | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S004 | N | 11 Sep 2014 | 5 - 6 | SW8260B | VOC | 1,3,5-Trimethylbenzene | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S004 | N | 11 Sep 2014 | 5 - 6 | SW8260B | VOC | 1,3-Dichlorobenzene | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S004 | N | 11 Sep 2014 | 5 - 6 | SW8260B | VOC | 1,3-Dichloropropane | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S004 | N | 11 Sep 2014 | 5 - 6 | SW8260B | VOC | 1,4-Dichlorobenzene | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S004 | N | 11 Sep 2014 | 5 - 6 | SW8260B | VOC | 2,2-Dichloropropane | 2.2 U | 2.2 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S004 | N | 11 Sep 2014 | 5 - 6 | SW8260B | VOC | 2-Butanone (MEK) | 5.5 U | 5.5 | 22 | 20 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S004 | N | 11 Sep 2014 | 5 - 6 | SW8260B | VOC | 2-Chloro-1,1,1-trifluoroethane | 2.2 U | 2.2 | 11 | 10 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S004 | N | 11 Sep 2014 | 5 - 6 | SW8260B | VOC | 2-Chloroethyl vinyl ether | 2.2 U | 2.2 | 11 | 10 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S004 | N | 11 Sep 2014 | 5 - 6 | SW8260B | VOC | 2-Chlorotoluene | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S004 | N | 11 Sep 2014 | 5 - 6 | SW8260B | VOC | 2-Hexanone | 5.5 U | 5.5 | 11 | 10 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S004 | N | 11 Sep 2014 | 5 - 6 | SW8260B | VOC | 4-Chlorotoluene | 1.1 U | 1.1 | 11 | 10 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S004 | N | 11 Sep 2014 | 5 - 6 | SW8260B | VOC | 4-Methyl-2-pentanone (MIBK) | 5.5 U | 5.5 | 11 | 10 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S004 | N | 11 Sep 2014 | 5 - 6 | SW8260B | VOC | Acetone | 5.5 U | 5.5 | 22 | 20 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S004 | N | 11 Sep 2014 | 5 - 6 | SW8260B | VOC | Benzene | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S004 | N | 11 Sep 2014 | 5 - 6 | SW8260B | VOC | Bromobenzene | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S004 | N | 11 Sep 2014 | 5 - 6 | SW8260B | VOC | Bromochloromethane | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S004 | N | 11 Sep 2014 | 5 - 6 | SW8260B | VOC | Bromodichloromethane | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S004 | N | 11 Sep 2014 | 5 - 6 | SW8260B | VOC | Bromoform | 2.2 U | 2.2 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S004 | N | 11 Sep 2014 | 5 - 6 | SW8260B | VOC | Bromomethane | 2.2 U | 2.2 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S004 | N | 11 Sep 2014 | 5 - 6 | SW8260B | VOC | Carbon tetrachloride | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S004 | N | 11 Sep 2014 | 5 - 6 | SW8260B | VOC | Chlorobenzene | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S004 | N | 11 Sep 2014 | 5 - 6 | SW8260B | VOC | Chloroethane | 2.2 U | 2.2 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S004 | N | 11 Sep 2014 | 5 - 6 | SW8260B | VOC | Chloromethane | 2.2 U | 2.2 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S004 | N | 11 Sep 2014 | 5 - 6 | SW8260B | VOC | Chlorotrifluoroethylene | 2.2 U | 2.2 | 11 | 10 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S004 | N | 11 Sep 2014 | 5 - 6 | SW8260B | VOC | cis-1,2-Dichloroethene | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S004 | N | 11 Sep 2014 | 5 - 6 | SW8260B | VOC | cis-1,3-Dichloropropene | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S004 | N | 11 Sep 2014 | 5 - 6 | SW8260B | VOC | Dibromochloromethane | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S004 | N | 11 Sep 2014 | 5 - 6 | SW8260B | VOC | Dibromomethane | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |

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**Test Stand Biovent Analytical Data**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | FSP SL | Units | FSP Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1279 | BVBS1279S004 | N | 11 Sep 2014 | 5 - 6 | SW8260B | VOC | Dichlorodifluoromethane | 2.2 U | 2.2 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S004 | N | 11 Sep 2014 | 5 - 6 | SW8260B | VOC | Ethylbenzene | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S004 | N | 11 Sep 2014 | 5 - 6 | SW8260B | VOC | Hexachlorobutadiene | 2.2 U | 2.2 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S004 | N | 11 Sep 2014 | 5 - 6 | SW8260B | VOC | Isopropylbenzene | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S004 | N | 11 Sep 2014 | 5 - 6 | SW8260B | VOC | m,p-Xylenes | 2.2 U | 2.2 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S004 | N | 11 Sep 2014 | 5 - 6 | SW8260B | VOC | Methylene chloride | 2.2 U | 2.2 | 11 | 10 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S004 | N | 11 Sep 2014 | 5 - 6 | SW8260B | VOC | Methyl-tert-butyl Ether (MTBE) | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S004 | N | 11 Sep 2014 | 5 - 6 | SW8260B | VOC | n-butylbenzene | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S004 | N | 11 Sep 2014 | 5 - 6 | SW8260B | VOC | n-Propylbenzene | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S004 | N | 11 Sep 2014 | 5 - 6 | SW8260B | VOC | o-Xylene | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S004 | N | 11 Sep 2014 | 5 - 6 | SW8260B | VOC | p-Isopropyltoluene | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S004 | N | 11 Sep 2014 | 5 - 6 | SW8260B | VOC | sec-Butylbenzene | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S004 | N | 11 Sep 2014 | 5 - 6 | SW8260B | VOC | Styrene | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S004 | N | 11 Sep 2014 | 5 - 6 | SW8260B | VOC | tert-Butylbenzene | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S004 | N | 11 Sep 2014 | 5 - 6 | SW8260B | VOC | Tetrachloroethene | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S004 | N | 11 Sep 2014 | 5 - 6 | SW8260B | VOC | Toluene | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S004 | N | 11 Sep 2014 | 5 - 6 | SW8260B | VOC | trans-1,2-Dichloroethene | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S004 | N | 11 Sep 2014 | 5 - 6 | SW8260B | VOC | trans-1,3-Dichloropropene | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S004 | N | 11 Sep 2014 | 5 - 6 | SW8260B | VOC | Trichloroethene | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S004 | N | 11 Sep 2014 | 5 - 6 | SW8260B | VOC | Trichlorofluoromethane | 2.2 U | 2.2 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S004 | N | 11 Sep 2014 | 5 - 6 | SW8260B | VOC | Trichloromethane (Chloroform) | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1279 | BVBS1279S004 | N | 11 Sep 2014 | 5 - 6 | SW8260B | VOC | Vinyl chloride | 2.2 U | 2.2 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S001 | N | 14 Jul 2014 | 2 - 3 | SW9045D | GENCHEM | pH | 7.52 = | | | | PH UNITS | | NC |
| SO | BVBS1280 | BVBS1280S001 | N | 14 Jul 2014 | 2 - 3 | Walkley-Black | GENCHEM | Total Organic Carbon | 2720 = | 643 | 643 | | mg/kg | | NC |
| SO | BVBS1280 | BVBS1280S001 | N | 14 Jul 2014 | 2 - 3 | M8015D | HC | Diesel Range Organics (C12-C14) | 5400 U | 2700 | 5400 | 5000 | µg/kg | X | N |
| SO | BVBS1280 | BVBS1280S001 | N | 14 Jul 2014 | 2 - 3 | M8015D | HC | Diesel Range Organics (C15-C20) | 5400 U | 2700 | 5400 | 5000 | µg/kg | X | N |
| SO | BVBS1280 | BVBS1280S001 | N | 14 Jul 2014 | 2 - 3 | M8015D | HC | Diesel Range Organics (C21-C30) | 25000 = | 2700 | 5400 | 5000 | µg/kg | X | Y |
| SO | BVBS1280 | BVBS1280S001 | N | 14 Jul 2014 | 2 - 3 | M8015D | HC | Diesel Range Organics (C8-C11) | 5400 U | 2700 | 5400 | 1000 | µg/kg | X | RL |
| SO | BVBS1280 | BVBS1280S001 | N | 14 Jul 2014 | 2 - 3 | SW8015B | HC | GRO (C6-C12) | 1200 U | 620 | 1200 | 1000 | µg/kg | X | N |
| SO | BVBS1280 | BVBS1280S001 | N | 14 Jul 2014 | 2 - 3 | M8015D | HC | ORO (C31-C40) | 46000 = | 5400 | 11000 | 10000 | µg/kg | X | Y |
| SO | BVBS1280 | BVBS1280S001 | N | 14 Jul 2014 | 2 - 3 | M8015D | HC | TOTAL EFH(C8-C40) | 73000 = | 2700 | 5400 | 10000 | µg/kg | X | Y |
| SO | BVBS1280 | BVBS1280S001 | N | 14 Jul 2014 | 2 - 3 | SW8270C-SIM | PAH | 1-Methylnaphthalene | 11 U | 5.4 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1280 | BVBS1280S001 | N | 14 Jul 2014 | 2 - 3 | SW8270C-SIM | PAH | 2-Methylnaphthalene | 11 U | 5.4 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1280 | BVBS1280S001 | N | 14 Jul 2014 | 2 - 3 | SW8270C-SIM | PAH | Acenaphthene | 11 U | 5.4 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1280 | BVBS1280S001 | N | 14 Jul 2014 | 2 - 3 | SW8270C-SIM | PAH | Acenaphthylene | 11 U | 5.4 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1280 | BVBS1280S001 | N | 14 Jul 2014 | 2 - 3 | SW8270C-SIM | PAH | Anthracene | 11 U | 5.4 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1280 | BVBS1280S001 | N | 14 Jul 2014 | 2 - 3 | SW8270C-SIM | PAH | Benzo(a)anthracene | 11 U | 5.4 | 11 | | µg/kg | | NC |
| SO | BVBS1280 | BVBS1280S001 | N | 14 Jul 2014 | 2 - 3 | SW8270C-SIM | PAH | Benzo(a)pyrene | 11 U | 5.4 | 11 | | µg/kg | | NC |

APPENDIX D-1

**Test Stand Biovent Analytical Data**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | FSP SL | Units | FSP Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1280 | BVBS1280S001 | N | 14 Jul 2014 | 2 - 3 | SW8270C-SIM | PAH | Benzo(b)fluoranthene | 11 U | 5.4 | 11 | | µg/kg | | NC |
| SO | BVBS1280 | BVBS1280S001 | N | 14 Jul 2014 | 2 - 3 | SW8270C-SIM | PAH | Benzo(ghi)perylene | 11 U | 5.4 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1280 | BVBS1280S001 | N | 14 Jul 2014 | 2 - 3 | SW8270C-SIM | PAH | Benzo(k)fluoranthene | 11 U | 5.4 | 11 | | µg/kg | | NC |
| SO | BVBS1280 | BVBS1280S001 | N | 14 Jul 2014 | 2 - 3 | SW8270C-SIM | PAH | Chrysene | 11 U | 5.4 | 11 | | µg/kg | | NC |
| SO | BVBS1280 | BVBS1280S001 | N | 14 Jul 2014 | 2 - 3 | SW8270C-SIM | PAH | Dibenzo(a,h)anthracene | 11 U | 5.4 | 11 | | µg/kg | | NC |
| SO | BVBS1280 | BVBS1280S001 | N | 14 Jul 2014 | 2 - 3 | SW8270C-SIM | PAH | Fluoranthene | 11 U | 5.4 | 11 | 5.2 | µg/kg | X | RL |
| SO | BVBS1280 | BVBS1280S001 | N | 14 Jul 2014 | 2 - 3 | SW8270C-SIM | PAH | Fluorene | 11 U | 5.4 | 11 | 3.8 | µg/kg | X | RL |
| SO | BVBS1280 | BVBS1280S001 | N | 14 Jul 2014 | 2 - 3 | SW8270C-SIM | PAH | Indeno(1,2,3-cd)pyrene | 11 U | 5.4 | 11 | | µg/kg | | NC |
| SO | BVBS1280 | BVBS1280S001 | N | 14 Jul 2014 | 2 - 3 | SW8270C-SIM | PAH | Naphthalene | 11 U | 5.4 | 11 | 3.6 | µg/kg | X | RL |
| SO | BVBS1280 | BVBS1280S001 | N | 14 Jul 2014 | 2 - 3 | SW8270C-SIM | PAH | PAHTEQM | 0 U | | | 4.47 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S001 | N | 14 Jul 2014 | 2 - 3 | SW8270C-SIM | PAH | Phenanthrene | 11 U | 5.4 | 11 | 3.9 | µg/kg | X | RL |
| SO | BVBS1280 | BVBS1280S001 | N | 14 Jul 2014 | 2 - 3 | SW8270C-SIM | PAH | Pyrene | 11 U | 5.4 | 11 | 5.6 | µg/kg | X | N |
| SO | BVBS1280 | BVBS1280S001 | N | 14 Jul 2014 | 2 - 3 | SW8270C-SIM | PHTH | Bis(2-ethylhexyl)phthalate | 22 U | 11 | 22 | 61 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S001 | N | 14 Jul 2014 | 2 - 3 | SW8270C-SIM | PHTH | Butyl benzyl phthalate | 22 U | 11 | 22 | 100 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S001 | N | 14 Jul 2014 | 2 - 3 | SW8270C-SIM | PHTH | Diethyl phthalate | 22 U | 11 | 22 | 27 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S001 | N | 14 Jul 2014 | 2 - 3 | SW8270C-SIM | PHTH | Dimethyl phthalate | 22 U | 11 | 22 | 27 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S001 | N | 14 Jul 2014 | 2 - 3 | SW8270C-SIM | PHTH | Di-n-butyl phthalate | 22 U | 11 | 22 | 27 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S001 | N | 14 Jul 2014 | 2 - 3 | SW8270C-SIM | PHTH | Di-n-octyl phthalate | 22 U | 11 | 22 | 27 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | SVOC | Diisopropyl ether | 1 U | 1 | 10 | 10 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S001 | N | 14 Jul 2014 | 2 - 3 | SW8270C-SIM | SVOC | n-Nitrosodimethylamine | 22 U | 11 | 22 | 10 | µg/kg | X | RL |
| SO | BVBS1280 | BVBS1280S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | SVOC | tert-Amyl methyl ether | 1 U | 1 | 5 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | SVOC | tert-Butyl alcohol | 10 U | 10 | 50 | 50 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | SVOC | tert-Butyl ethyl ether | 1 U | 1 | 5 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | 1,1,1,2-Tetrachloroethane | 1 U | 1 | 5 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | 1,1,1-Trichloroethane | 1 U | 1 | 5 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | 1,1,2,2-Tetrachloroethane | 1 U | 1 | 5 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | 1,1,2-Trichloro-1,2,2-trifluoroethane | 2 U | 2 | 5 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | 1,1,2-Trichloroethane | 1 U | 1 | 5 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | 1,1-Dichloroethane | 1 U | 1 | 5 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | 1,1-Dichloroethene | 1 U | 1 | 5 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | 1,1-Dichloropropene | 1 U | 1 | 5 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | 1,2,3-Trichlorobenzene | 2 U | 2 | 5 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | 1,2,3-Trichloropropane | 2 U | 2 | 5 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | 1,2,4-Trichlorobenzene | 2 U | 2 | 5 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | 1,2,4-Trimethylbenzene | 1 U | 1 | 5 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | 1,2-Dibromo-3-chloropropane | 2 U | 2 | 10 | 10 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | 1,2-Dibromoethane (EDB) | 1 U | 1 | 5 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | 1,2-Dichlorobenzene | 1 U | 1 | 5 | 5 | µg/kg | | N |

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**Test Stand Biovent Analytical Data**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | FSP SL | Units | FSP Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1280 | BVBS1280S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | 1,2-Dichloroethane | 1 U | 1 | 5 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | 1,2-Dichloropropane | 1 U | 1 | 5 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | 1,3,5-Trimethylbenzene | 1 U | 1 | 5 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | 1,3-Dichlorobenzene | 1 U | 1 | 5 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | 1,3-Dichloropropane | 1 U | 1 | 5 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | 1,4-Dichlorobenzene | 1 U | 1 | 5 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | 2,2-Dichloropropane | 2 U | 2 | 5 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | 2-Butanone (MEK) | 5 U | 5 | 20 | 20 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | 2-Chloro-1,1,1-trifluoroethane | 2 U | 2 | 10 | 10 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | 2-Chloroethyl vinyl ether | 2 U | 2 | 10 | 10 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | 2-Chlorotoluene | 1 U | 1 | 5 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | 2-Hexanone | 5 U | 5 | 10 | 10 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | 4-Chlorotoluene | 1 U | 1 | 10 | 10 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | 4-Methyl-2-pentanone (MIBK) | 5 U | 5 | 10 | 10 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | Acetone | 5 U | 5 | 20 | 20 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | Benzene | 1 U | 1 | 5 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | Bromobenzene | 1 U | 1 | 5 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | Bromochloromethane | 1 U | 1 | 5 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | Bromodichloromethane | 1 U | 1 | 5 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | Bromoform | 2 U | 2 | 5 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | Bromomethane | 2 U | 2 | 5 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | Carbon tetrachloride | 1 U | 1 | 5 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | Chlorobenzene | 1 U | 1 | 5 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | Chloroethane | 2 U | 2 | 5 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | Chloromethane | 2 U | 2 | 5 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | Chlorotrifluoroethylene | 2 U | 2 | 10 | 10 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | cis-1,2-Dichloroethene | 1 U | 1 | 5 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | cis-1,3-Dichloropropene | 1 U | 1 | 5 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | Dibromochloromethane | 1 U | 1 | 5 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | Dibromomethane | 1 U | 1 | 5 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | Dichlorodifluoromethane | 2 U | 2 | 5 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | Ethylbenzene | 1 U | 1 | 5 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | Hexachlorobutadiene | 2 U | 2 | 5 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | Isopropylbenzene | 1 U | 1 | 5 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | m,p-Xylenes | 2 U | 2 | 5 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | Methylene chloride | 2 U | 2 | 10 | 10 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | Methyl-tert-butyl Ether (MTBE) | 1 U | 1 | 5 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | n-butylbenzene | 1 U | 1 | 5 | 5 | µg/kg | | N |

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**Test Stand Biovent Analytical Data**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | FSP SL | Units | FSP Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1280 | BVBS1280S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | n-Propylbenzene | 1 U | 1 | 5 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | o-Xylene | 1 U | 1 | 5 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | p-Isopropyltoluene | 1 U | 1 | 5 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | sec-Butylbenzene | 1 U | 1 | 5 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | Styrene | 1 U | 1 | 5 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | tert-Butylbenzene | 1 U | 1 | 5 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | Tetrachloroethene | 1 U | 1 | 5 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | Toluene | 1 U | 1 | 5 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | trans-1,2-Dichloroethene | 1 U | 1 | 5 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | trans-1,3-Dichloropropene | 1 U | 1 | 5 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | Trichloroethene | 1 U | 1 | 5 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | Trichlorofluoromethane | 2 U | 2 | 5 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | Trichloromethane (Chloroform) | 1 U | 1 | 5 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | Vinyl chloride | 2 U | 2 | 5 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S002 | N | 14 Jul 2014 | 3.5 - 4.9 | SW9045D | GENCHEM | pH | 7.83 = | | | | PH UNITS | | NC |
| SO | BVBS1280 | BVBS1280S002 | N | 14 Jul 2014 | 3.5 - 4.9 | Walkley-Black | GENCHEM | Total Organic Carbon | 664 U | 664 | 664 | | mg/kg | | NC |
| SO | BVBS1280 | BVBS1280S002 | N | 14 Jul 2014 | 3.5 - 4.9 | M8015D | HC | Diesel Range Organics (C12-C14) | 5700 U | 2800 | 5700 | 5000 | µg/kg | X | N |
| SO | BVBS1280 | BVBS1280S002 | N | 14 Jul 2014 | 3.5 - 4.9 | M8015D | HC | Diesel Range Organics (C15-C20) | 5700 U | 2800 | 5700 | 5000 | µg/kg | X | N |
| SO | BVBS1280 | BVBS1280S002 | N | 14 Jul 2014 | 3.5 - 4.9 | M8015D | HC | Diesel Range Organics (C21-C30) | 19000 = | 2800 | 5700 | 5000 | µg/kg | X | Y |
| SO | BVBS1280 | BVBS1280S002 | N | 14 Jul 2014 | 3.5 - 4.9 | M8015D | HC | Diesel Range Organics (C8-C11) | 5700 U | 2800 | 5700 | 1000 | µg/kg | X | RL |
| SO | BVBS1280 | BVBS1280S002 | N | 14 Jul 2014 | 3.5 - 4.9 | SW8015B | HC | GRO (C6-C12) | 1100 U | 560 | 1100 | 1000 | µg/kg | X | N |
| SO | BVBS1280 | BVBS1280S002 | N | 14 Jul 2014 | 3.5 - 4.9 | M8015D | HC | ORO (C31-C40) | 50000 = | 5700 | 11000 | 10000 | µg/kg | X | Y |
| SO | BVBS1280 | BVBS1280S002 | N | 14 Jul 2014 | 3.5 - 4.9 | M8015D | HC | TOTAL EFH(C8-C40) | 70000 = | 2800 | 5700 | 10000 | µg/kg | X | Y |
| SO | BVBS1280 | BVBS1280S002 | N | 14 Jul 2014 | 3.5 - 4.9 | SW8270C-SIM | PAH | 1-Methylnaphthalene | 11 U | 5.7 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1280 | BVBS1280S002 | N | 14 Jul 2014 | 3.5 - 4.9 | SW8270C-SIM | PAH | 2-Methylnaphthalene | 11 U | 5.7 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1280 | BVBS1280S002 | N | 14 Jul 2014 | 3.5 - 4.9 | SW8270C-SIM | PAH | Acenaphthene | 11 U | 5.7 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1280 | BVBS1280S002 | N | 14 Jul 2014 | 3.5 - 4.9 | SW8270C-SIM | PAH | Acenaphthylene | 11 U | 5.7 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1280 | BVBS1280S002 | N | 14 Jul 2014 | 3.5 - 4.9 | SW8270C-SIM | PAH | Anthracene | 11 U | 5.7 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1280 | BVBS1280S002 | N | 14 Jul 2014 | 3.5 - 4.9 | SW8270C-SIM | PAH | Benzo(a)anthracene | 11 U | 5.7 | 11 | | µg/kg | | NC |
| SO | BVBS1280 | BVBS1280S002 | N | 14 Jul 2014 | 3.5 - 4.9 | SW8270C-SIM | PAH | Benzo(a)pyrene | 11 U | 5.7 | 11 | | µg/kg | | NC |
| SO | BVBS1280 | BVBS1280S002 | N | 14 Jul 2014 | 3.5 - 4.9 | SW8270C-SIM | PAH | Benzo(b)fluoranthene | 11 U | 5.7 | 11 | | µg/kg | | NC |
| SO | BVBS1280 | BVBS1280S002 | N | 14 Jul 2014 | 3.5 - 4.9 | SW8270C-SIM | PAH | Benzo(ghi)perylene | 11 U | 5.7 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1280 | BVBS1280S002 | N | 14 Jul 2014 | 3.5 - 4.9 | SW8270C-SIM | PAH | Benzo(k)fluoranthene | 11 U | 5.7 | 11 | | µg/kg | | NC |
| SO | BVBS1280 | BVBS1280S002 | N | 14 Jul 2014 | 3.5 - 4.9 | SW8270C-SIM | PAH | Chrysene | 11 U | 5.7 | 11 | | µg/kg | | NC |
| SO | BVBS1280 | BVBS1280S002 | N | 14 Jul 2014 | 3.5 - 4.9 | SW8270C-SIM | PAH | Dibenzo(a,h)anthracene | 11 U | 5.7 | 11 | | µg/kg | | NC |
| SO | BVBS1280 | BVBS1280S002 | N | 14 Jul 2014 | 3.5 - 4.9 | SW8270C-SIM | PAH | Fluoranthene | 11 U | 5.7 | 11 | 5.2 | µg/kg | X | RL |
| SO | BVBS1280 | BVBS1280S002 | N | 14 Jul 2014 | 3.5 - 4.9 | SW8270C-SIM | PAH | Fluorene | 11 U | 5.7 | 11 | 3.8 | µg/kg | X | RL |
| SO | BVBS1280 | BVBS1280S002 | N | 14 Jul 2014 | 3.5 - 4.9 | SW8270C-SIM | PAH | Indeno(1,2,3-cd)pyrene | 11 U | 5.7 | 11 | | µg/kg | | NC |

APPENDIX D-1

**Test Stand Biovent Analytical Data**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | FSP SL | Units | FSP Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1280 | BVBS1280S002 | N | 14 Jul 2014 | 3.5 - 4.9 | SW8270C-SIM | PAH | Naphthalene | 11 U | 5.7 | 11 | 3.6 | µg/kg | X | RL |
| SO | BVBS1280 | BVBS1280S002 | N | 14 Jul 2014 | 3.5 - 4.9 | SW8270C-SIM | PAH | PAHTEQM | 0 U | | | 4.47 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S002 | N | 14 Jul 2014 | 3.5 - 4.9 | SW8270C-SIM | PAH | Phenanthrene | 11 U | 5.7 | 11 | 3.9 | µg/kg | X | RL |
| SO | BVBS1280 | BVBS1280S002 | N | 14 Jul 2014 | 3.5 - 4.9 | SW8270C-SIM | PAH | Pyrene | 11 U | 5.7 | 11 | 5.6 | µg/kg | X | RL |
| SO | BVBS1280 | BVBS1280S002 | N | 14 Jul 2014 | 3.5 - 4.9 | SW8270C-SIM | PHTH | Bis(2-ethylhexyl)phthalate | 23 U | 11 | 23 | 61 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S002 | N | 14 Jul 2014 | 3.5 - 4.9 | SW8270C-SIM | PHTH | Butyl benzyl phthalate | 23 U | 11 | 23 | 100 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S002 | N | 14 Jul 2014 | 3.5 - 4.9 | SW8270C-SIM | PHTH | Diethyl phthalate | 23 U | 11 | 23 | 27 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S002 | N | 14 Jul 2014 | 3.5 - 4.9 | SW8270C-SIM | PHTH | Dimethyl phthalate | 23 U | 11 | 23 | 27 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S002 | N | 14 Jul 2014 | 3.5 - 4.9 | SW8270C-SIM | PHTH | Di-n-butyl phthalate | 23 U | 11 | 23 | 27 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S002 | N | 14 Jul 2014 | 3.5 - 4.9 | SW8270C-SIM | PHTH | Di-n-octyl phthalate | 23 U | 11 | 23 | 27 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S002 | N | 14 Jul 2014 | 3.5 - 4.9 | SW8260B | SVOC | Diisopropyl ether | 1.1 U | 1.1 | 11 | 10 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S002 | N | 14 Jul 2014 | 3.5 - 4.9 | SW8270C-SIM | SVOC | n-Nitrosodimethylamine | 23 U | 11 | 23 | 10 | µg/kg | X | RL |
| SO | BVBS1280 | BVBS1280S002 | N | 14 Jul 2014 | 3.5 - 4.9 | SW8260B | SVOC | tert-Amyl methyl ether | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S002 | N | 14 Jul 2014 | 3.5 - 4.9 | SW8260B | SVOC | tert-Butyl alcohol | 11 U | 11 | 57 | 50 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S002 | N | 14 Jul 2014 | 3.5 - 4.9 | SW8260B | SVOC | tert-Butyl ethyl ether | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S002 | N | 14 Jul 2014 | 3.5 - 4.9 | SW8260B | VOC | 1,1,1,2-Tetrachloroethane | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S002 | N | 14 Jul 2014 | 3.5 - 4.9 | SW8260B | VOC | 1,1,1-Trichloroethane | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S002 | N | 14 Jul 2014 | 3.5 - 4.9 | SW8260B | VOC | 1,1,2,2-Tetrachloroethane | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S002 | N | 14 Jul 2014 | 3.5 - 4.9 | SW8260B | VOC | 1,1,2-Trichloro-1,2,2-trifluoroethane | 2.3 U | 2.3 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S002 | N | 14 Jul 2014 | 3.5 - 4.9 | SW8260B | VOC | 1,1,2-Trichloroethane | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S002 | N | 14 Jul 2014 | 3.5 - 4.9 | SW8260B | VOC | 1,1-Dichloroethane | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S002 | N | 14 Jul 2014 | 3.5 - 4.9 | SW8260B | VOC | 1,1-Dichloroethene | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S002 | N | 14 Jul 2014 | 3.5 - 4.9 | SW8260B | VOC | 1,1-Dichloropropene | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S002 | N | 14 Jul 2014 | 3.5 - 4.9 | SW8260B | VOC | 1,2,3-Trichlorobenzene | 2.3 U | 2.3 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S002 | N | 14 Jul 2014 | 3.5 - 4.9 | SW8260B | VOC | 1,2,3-Trichloropropane | 2.3 U | 2.3 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S002 | N | 14 Jul 2014 | 3.5 - 4.9 | SW8260B | VOC | 1,2,4-Trichlorobenzene | 2.3 U | 2.3 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S002 | N | 14 Jul 2014 | 3.5 - 4.9 | SW8260B | VOC | 1,2,4-Trimethylbenzene | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S002 | N | 14 Jul 2014 | 3.5 - 4.9 | SW8260B | VOC | 1,2-Dibromo-3-chloropropane | 2.3 U | 2.3 | 11 | 10 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S002 | N | 14 Jul 2014 | 3.5 - 4.9 | SW8260B | VOC | 1,2-Dibromoethane (EDB) | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S002 | N | 14 Jul 2014 | 3.5 - 4.9 | SW8260B | VOC | 1,2-Dichlorobenzene | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S002 | N | 14 Jul 2014 | 3.5 - 4.9 | SW8260B | VOC | 1,2-Dichloroethane | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S002 | N | 14 Jul 2014 | 3.5 - 4.9 | SW8260B | VOC | 1,2-Dichloropropane | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S002 | N | 14 Jul 2014 | 3.5 - 4.9 | SW8260B | VOC | 1,3,5-Trimethylbenzene | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S002 | N | 14 Jul 2014 | 3.5 - 4.9 | SW8260B | VOC | 1,3-Dichlorobenzene | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S002 | N | 14 Jul 2014 | 3.5 - 4.9 | SW8260B | VOC | 1,3-Dichloropropane | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S002 | N | 14 Jul 2014 | 3.5 - 4.9 | SW8260B | VOC | 1,4-Dichlorobenzene | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S002 | N | 14 Jul 2014 | 3.5 - 4.9 | SW8260B | VOC | 2,2-Dichloropropane | 2.3 U | 2.3 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S002 | N | 14 Jul 2014 | 3.5 - 4.9 | SW8260B | VOC | 2-Butanone (MEK) | 5.7 U | 5.7 | 23 | 20 | µg/kg | | N |

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**Test Stand Biovent Analytical Data**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | FSP SL | Units | FSP Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1280 | BVBS1280S002 | N | 14 Jul 2014 | 3.5 - 4.9 | SW8260B | VOC | 2-Chloro-1,1,1-trifluoroethane | 2.3 U | 2.3 | 11 | 10 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S002 | N | 14 Jul 2014 | 3.5 - 4.9 | SW8260B | VOC | 2-Chloroethyl vinyl ether | 2.3 U | 2.3 | 11 | 10 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S002 | N | 14 Jul 2014 | 3.5 - 4.9 | SW8260B | VOC | 2-Chlorotoluene | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S002 | N | 14 Jul 2014 | 3.5 - 4.9 | SW8260B | VOC | 2-Hexanone | 5.7 U | 5.7 | 11 | 10 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S002 | N | 14 Jul 2014 | 3.5 - 4.9 | SW8260B | VOC | 4-Chlorotoluene | 1.1 U | 1.1 | 11 | 10 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S002 | N | 14 Jul 2014 | 3.5 - 4.9 | SW8260B | VOC | 4-Methyl-2-pentanone (MIBK) | 5.7 U | 5.7 | 11 | 10 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S002 | N | 14 Jul 2014 | 3.5 - 4.9 | SW8260B | VOC | Acetone | 5.7 U | 5.7 | 23 | 20 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S002 | N | 14 Jul 2014 | 3.5 - 4.9 | SW8260B | VOC | Benzene | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S002 | N | 14 Jul 2014 | 3.5 - 4.9 | SW8260B | VOC | Bromobenzene | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S002 | N | 14 Jul 2014 | 3.5 - 4.9 | SW8260B | VOC | Bromochloromethane | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S002 | N | 14 Jul 2014 | 3.5 - 4.9 | SW8260B | VOC | Bromodichloromethane | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S002 | N | 14 Jul 2014 | 3.5 - 4.9 | SW8260B | VOC | Bromoform | 2.3 U | 2.3 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S002 | N | 14 Jul 2014 | 3.5 - 4.9 | SW8260B | VOC | Bromomethane | 2.3 U | 2.3 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S002 | N | 14 Jul 2014 | 3.5 - 4.9 | SW8260B | VOC | Carbon tetrachloride | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S002 | N | 14 Jul 2014 | 3.5 - 4.9 | SW8260B | VOC | Chlorobenzene | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S002 | N | 14 Jul 2014 | 3.5 - 4.9 | SW8260B | VOC | Chloroethane | 2.3 U | 2.3 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S002 | N | 14 Jul 2014 | 3.5 - 4.9 | SW8260B | VOC | Chloromethane | 2.3 U | 2.3 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S002 | N | 14 Jul 2014 | 3.5 - 4.9 | SW8260B | VOC | Chlorotrifluoroethylene | 2.3 U | 2.3 | 11 | 10 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S002 | N | 14 Jul 2014 | 3.5 - 4.9 | SW8260B | VOC | cis-1,2-Dichloroethene | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S002 | N | 14 Jul 2014 | 3.5 - 4.9 | SW8260B | VOC | cis-1,3-Dichloropropene | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S002 | N | 14 Jul 2014 | 3.5 - 4.9 | SW8260B | VOC | Dibromochloromethane | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S002 | N | 14 Jul 2014 | 3.5 - 4.9 | SW8260B | VOC | Dibromomethane | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S002 | N | 14 Jul 2014 | 3.5 - 4.9 | SW8260B | VOC | Dichlorodifluoromethane | 2.3 U | 2.3 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S002 | N | 14 Jul 2014 | 3.5 - 4.9 | SW8260B | VOC | Ethylbenzene | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S002 | N | 14 Jul 2014 | 3.5 - 4.9 | SW8260B | VOC | Hexachlorobutadiene | 2.3 U | 2.3 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S002 | N | 14 Jul 2014 | 3.5 - 4.9 | SW8260B | VOC | Isopropylbenzene | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S002 | N | 14 Jul 2014 | 3.5 - 4.9 | SW8260B | VOC | m,p-Xylenes | 2.3 U | 2.3 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S002 | N | 14 Jul 2014 | 3.5 - 4.9 | SW8260B | VOC | Methylene chloride | 2.3 U | 2.3 | 11 | 10 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S002 | N | 14 Jul 2014 | 3.5 - 4.9 | SW8260B | VOC | Methyl-tert-butyl Ether (MTBE) | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S002 | N | 14 Jul 2014 | 3.5 - 4.9 | SW8260B | VOC | n-butylbenzene | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S002 | N | 14 Jul 2014 | 3.5 - 4.9 | SW8260B | VOC | n-Propylbenzene | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S002 | N | 14 Jul 2014 | 3.5 - 4.9 | SW8260B | VOC | o-Xylene | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S002 | N | 14 Jul 2014 | 3.5 - 4.9 | SW8260B | VOC | p-Isopropyltoluene | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S002 | N | 14 Jul 2014 | 3.5 - 4.9 | SW8260B | VOC | sec-Butylbenzene | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S002 | N | 14 Jul 2014 | 3.5 - 4.9 | SW8260B | VOC | Styrene | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S002 | N | 14 Jul 2014 | 3.5 - 4.9 | SW8260B | VOC | tert-Butylbenzene | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S002 | N | 14 Jul 2014 | 3.5 - 4.9 | SW8260B | VOC | Tetrachloroethene | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S002 | N | 14 Jul 2014 | 3.5 - 4.9 | SW8260B | VOC | Toluene | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |

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**Test Stand Biovent Analytical Data**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | FSP SL | Units | FSP Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1280 | BVBS1280S002 | N | 14 Jul 2014 | 3.5 - 4.9 | SW8260B | VOC | trans-1,2-Dichloroethene | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S002 | N | 14 Jul 2014 | 3.5 - 4.9 | SW8260B | VOC | trans-1,3-Dichloropropene | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S002 | N | 14 Jul 2014 | 3.5 - 4.9 | SW8260B | VOC | Trichloroethene | 1.5 J | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S002 | N | 14 Jul 2014 | 3.5 - 4.9 | SW8260B | VOC | Trichlorofluoromethane | 2.3 U | 2.3 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S002 | N | 14 Jul 2014 | 3.5 - 4.9 | SW8260B | VOC | Trichloromethane (Chloroform) | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S002 | N | 14 Jul 2014 | 3.5 - 4.9 | SW8260B | VOC | Vinyl chloride | 2.3 U | 2.3 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S003 | N | 11 Sep 2014 | 2 - 3 | SW9045D | GENCHEM | pH | 7.6 = | | | | PH UNITS | | NC |
| SO | BVBS1280 | BVBS1280S003 | N | 11 Sep 2014 | 2 - 3 | Walkley-Black | GENCHEM | Total Organic Carbon | 687 = | 632 | 632 | | mg/kg | | NC |
| SO | BVBS1280 | BVBS1280S003 | N | 11 Sep 2014 | 2 - 3 | M8015D | HC | Diesel Range Organics (C12-C14) | 5300 U | 2700 | 5300 | 5000 | µg/kg | X | N |
| SO | BVBS1280 | BVBS1280S003 | N | 11 Sep 2014 | 2 - 3 | M8015D | HC | Diesel Range Organics (C15-C20) | 5300 U | 2700 | 5300 | 5000 | µg/kg | X | N |
| SO | BVBS1280 | BVBS1280S003 | N | 11 Sep 2014 | 2 - 3 | M8015D | HC | Diesel Range Organics (C21-C30) | 9000 = | 2700 | 5300 | 5000 | µg/kg | X | Y |
| SO | BVBS1280 | BVBS1280S003 | N | 11 Sep 2014 | 2 - 3 | M8015D | HC | Diesel Range Organics (C8-C11) | 5300 U | 2700 | 5300 | 1000 | µg/kg | X | RL |
| SO | BVBS1280 | BVBS1280S003 | N | 11 Sep 2014 | 2 - 3 | SW8015B | HC | GRO (C6-C12) | 1100 U | 560 | 1100 | 1000 | µg/kg | X | N |
| SO | BVBS1280 | BVBS1280S003 | N | 11 Sep 2014 | 2 - 3 | M8015D | HC | ORO (C31-C40) | 12000 = | 5300 | 11000 | 10000 | µg/kg | X | Y |
| SO | BVBS1280 | BVBS1280S003 | N | 11 Sep 2014 | 2 - 3 | M8015D | HC | TOTAL EFH(C8-C40) | 22000 = | 2700 | 5300 | 10000 | µg/kg | X | Y |
| SO | BVBS1280 | BVBS1280S003 | N | 11 Sep 2014 | 2 - 3 | SW8270C-SIM | PAH | 1-Methylnaphthalene | 11 U | 5.3 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1280 | BVBS1280S003 | N | 11 Sep 2014 | 2 - 3 | SW8270C-SIM | PAH | 2-Methylnaphthalene | 11 U | 5.3 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1280 | BVBS1280S003 | N | 11 Sep 2014 | 2 - 3 | SW8270C-SIM | PAH | Acenaphthene | 11 U | 5.3 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1280 | BVBS1280S003 | N | 11 Sep 2014 | 2 - 3 | SW8270C-SIM | PAH | Acenaphthylene | 11 U | 5.3 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1280 | BVBS1280S003 | N | 11 Sep 2014 | 2 - 3 | SW8270C-SIM | PAH | Anthracene | 11 U | 5.3 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1280 | BVBS1280S003 | N | 11 Sep 2014 | 2 - 3 | SW8270C-SIM | PAH | Benzo(a)anthracene | 11 U | 5.3 | 11 | | µg/kg | | NC |
| SO | BVBS1280 | BVBS1280S003 | N | 11 Sep 2014 | 2 - 3 | SW8270C-SIM | PAH | Benzo(a)pyrene | 11 U | 5.3 | 11 | | µg/kg | | NC |
| SO | BVBS1280 | BVBS1280S003 | N | 11 Sep 2014 | 2 - 3 | SW8270C-SIM | PAH | Benzo(b)fluoranthene | 11 U | 5.3 | 11 | | µg/kg | | NC |
| SO | BVBS1280 | BVBS1280S003 | N | 11 Sep 2014 | 2 - 3 | SW8270C-SIM | PAH | Benzo(ghi)perylene | 11 U | 5.3 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1280 | BVBS1280S003 | N | 11 Sep 2014 | 2 - 3 | SW8270C-SIM | PAH | Benzo(k)fluoranthene | 11 U | 5.3 | 11 | | µg/kg | | NC |
| SO | BVBS1280 | BVBS1280S003 | N | 11 Sep 2014 | 2 - 3 | SW8270C-SIM | PAH | Chrysene | 11 U | 5.3 | 11 | | µg/kg | | NC |
| SO | BVBS1280 | BVBS1280S003 | N | 11 Sep 2014 | 2 - 3 | SW8270C-SIM | PAH | Dibenzo(a,h)anthracene | 11 U | 5.3 | 11 | | µg/kg | | NC |
| SO | BVBS1280 | BVBS1280S003 | N | 11 Sep 2014 | 2 - 3 | SW8270C-SIM | PAH | Fluoranthene | 11 U | 5.3 | 11 | 5.2 | µg/kg | X | RL |
| SO | BVBS1280 | BVBS1280S003 | N | 11 Sep 2014 | 2 - 3 | SW8270C-SIM | PAH | Fluorene | 11 U | 5.3 | 11 | 3.8 | µg/kg | X | RL |
| SO | BVBS1280 | BVBS1280S003 | N | 11 Sep 2014 | 2 - 3 | SW8270C-SIM | PAH | Indeno(1,2,3-cd)pyrene | 11 U | 5.3 | 11 | | µg/kg | | NC |
| SO | BVBS1280 | BVBS1280S003 | N | 11 Sep 2014 | 2 - 3 | SW8270C-SIM | PAH | Naphthalene | 11 U | 5.3 | 11 | 3.6 | µg/kg | X | RL |
| SO | BVBS1280 | BVBS1280S003 | N | 11 Sep 2014 | 2 - 3 | SW8270C-SIM | PAH | PAHTEQM | 0 U | | | 4.47 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S003 | N | 11 Sep 2014 | 2 - 3 | SW8270C-SIM | PAH | Phenanthrene | 11 U | 5.3 | 11 | 3.9 | µg/kg | X | RL |
| SO | BVBS1280 | BVBS1280S003 | N | 11 Sep 2014 | 2 - 3 | SW8270C-SIM | PAH | Pyrene | 11 U | 5.3 | 11 | 5.6 | µg/kg | X | N |
| SO | BVBS1280 | BVBS1280S003 | N | 11 Sep 2014 | 2 - 3 | SW8270C-SIM | PHTH | Bis(2-ethylhexyl)phthalate | 21 U | 11 | 21 | 61 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S003 | N | 11 Sep 2014 | 2 - 3 | SW8270C-SIM | PHTH | Butyl benzyl phthalate | 21 U | 11 | 21 | 100 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S003 | N | 11 Sep 2014 | 2 - 3 | SW8270C-SIM | PHTH | Diethyl phthalate | 21 U | 11 | 21 | 27 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S003 | N | 11 Sep 2014 | 2 - 3 | SW8270C-SIM | PHTH | Dimethyl phthalate | 21 U | 11 | 21 | 27 | µg/kg | | N |

APPENDIX D-1

**Test Stand Biovent Analytical Data**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | FSP SL | Units | FSP Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1280 | BVBS1280S003 | N | 11 Sep 2014 | 2 - 3 | SW8270C-SIM | PHTH | Di-n-butyl phthalate | 21 U | 11 | 21 | 27 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S003 | N | 11 Sep 2014 | 2 - 3 | SW8270C-SIM | PHTH | Di-n-octyl phthalate | 21 U | 11 | 21 | 27 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | SVOC | Diisopropyl ether | 1.1 U | 1.1 | 11 | 10 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S003 | N | 11 Sep 2014 | 2 - 3 | SW8270C-SIM | SVOC | n-Nitrosodimethylamine | 21 U | 11 | 21 | 10 | µg/kg | X | RL |
| SO | BVBS1280 | BVBS1280S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | SVOC | tert-Amyl methyl ether | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | SVOC | tert-Butyl alcohol | 11 U | 11 | 55 | 50 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | SVOC | tert-Butyl ethyl ether | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | 1,1,1,2-Tetrachloroethane | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | 1,1,1-Trichloroethane | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | 1,1,2,2-Tetrachloroethane | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | 1,1,2-Trichloro-1,2,2-trifluoroethane | 2.2 U | 2.2 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | 1,1,2-Trichloroethane | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | 1,1-Dichloroethane | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | 1,1-Dichloroethene | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | 1,1-Dichloropropene | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | 1,2,3-Trichlorobenzene | 2.2 U | 2.2 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | 1,2,3-Trichloropropane | 2.2 U | 2.2 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | 1,2,4-Trichlorobenzene | 2.2 U | 2.2 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | 1,2,4-Trimethylbenzene | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | 1,2-Dibromo-3-chloropropane | 2.2 U | 2.2 | 11 | 10 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | 1,2-Dibromoethane (EDB) | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | 1,2-Dichlorobenzene | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | 1,2-Dichloroethane | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | 1,2-Dichloropropane | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | 1,3,5-Trimethylbenzene | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | 1,3-Dichlorobenzene | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | 1,3-Dichloropropane | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | 1,4-Dichlorobenzene | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | 2,2-Dichloropropane | 2.2 U | 2.2 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | 2-Butanone (MEK) | 5.5 U | 5.5 | 22 | 20 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | 2-Chloro-1,1,1-trifluoroethane | 2.2 U | 2.2 | 11 | 10 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | 2-Chloroethyl vinyl ether | 2.2 U | 2.2 | 11 | 10 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | 2-Chlorotoluene | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | 2-Hexanone | 5.5 U | 5.5 | 11 | 10 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | 4-Chlorotoluene | 1.1 U | 1.1 | 11 | 10 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | 4-Methyl-2-pentanone (MIBK) | 5.5 U | 5.5 | 11 | 10 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | Acetone | 5.5 U | 5.5 | 22 | 20 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | Benzene | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |

APPENDIX D-1

**Test Stand Biovent Analytical Data**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | FSP SL | Units | FSP Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1280 | BVBS1280S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | Bromobenzene | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | Bromochloromethane | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | Bromodichloromethane | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | Bromoform | 2.2 U | 2.2 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | Bromomethane | 2.2 U | 2.2 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | Carbon tetrachloride | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | Chlorobenzene | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | Chloroethane | 2.2 U | 2.2 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | Chloromethane | 2.2 U | 2.2 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | Chlorotrifluoroethylene | 2.2 U | 2.2 | 11 | 10 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | cis-1,2-Dichloroethene | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | cis-1,3-Dichloropropene | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | Dibromochloromethane | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | Dibromomethane | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | Dichlorodifluoromethane | 2.2 U | 2.2 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | Ethylbenzene | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | Hexachlorobutadiene | 2.2 U | 2.2 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | Isopropylbenzene | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | m,p-Xylenes | 2.2 U | 2.2 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | Methylene chloride | 2.2 U | 2.2 | 11 | 10 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | Methyl-tert-butyl Ether (MTBE) | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | n-butylbenzene | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | n-Propylbenzene | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | o-Xylene | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | p-Isopropyltoluene | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | sec-Butylbenzene | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | Styrene | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | tert-Butylbenzene | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | Tetrachloroethene | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | Toluene | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | trans-1,2-Dichloroethene | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | trans-1,3-Dichloropropene | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | Trichloroethene | 1.3 J | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | Trichlorofluoromethane | 2.2 U | 2.2 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | Trichloromethane (Chloroform) | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S003 | N | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | Vinyl chloride | 2.2 U | 2.2 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S003SP | FS | 11 Sep 2014 | 2 - 3 | SW9045D | GENCHEM | pH | 6.7 = | | | | PH UNITS | | NC |
| SO | BVBS1280 | BVBS1280S003SP | FS | 11 Sep 2014 | 2 - 3 | SW9060 | GENCHEM | Total Organic Carbon | 1100 J | 33.3 | 100 | | mg/kg | | NC |

APPENDIX D-1

**Test Stand Biovent Analytical Data**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | FSP SL | Units | FSP Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1280 | BVBS1280S003SP | FS | 11 Sep 2014 | 2 - 3 | M8015D | HC | Diesel Range Organics (C12-C14) | 5300 UJ | 5300 | 5300 | 5000 | µg/kg | X | RL |
| SO | BVBS1280 | BVBS1280S003SP | FS | 11 Sep 2014 | 2 - 3 | M8015D | HC | Diesel Range Organics (C15-C20) | 5300 UJ | 5300 | 5300 | 5000 | µg/kg | X | RL |
| SO | BVBS1280 | BVBS1280S003SP | FS | 11 Sep 2014 | 2 - 3 | M8015D | HC | Diesel Range Organics (C21-C30) | 6500 J | 5300 | 5300 | 5000 | µg/kg | X | Y |
| SO | BVBS1280 | BVBS1280S003SP | FS | 11 Sep 2014 | 2 - 3 | M8015D | HC | Diesel Range Organics (C8-C11) | 5300 UJ | 5300 | 5300 | 1000 | µg/kg | X | RL |
| SO | BVBS1280 | BVBS1280S003SP | FS | 11 Sep 2014 | 2 - 3 | SW8015B | HC | GRO (C4-C12) | 530 U | -5.3E+07 | 530 | 1000 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S003SP | FS | 11 Sep 2014 | 2 - 3 | M8015D | HC | ORO (C31-C40) | 13000 J | 5300 | 5300 | 10000 | µg/kg | X | Y |
| SO | BVBS1280 | BVBS1280S003SP | FS | 11 Sep 2014 | 2 - 3 | SW8270C-SIM | PAH | 1-Methylnaphthalene | 11 U | 11 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1280 | BVBS1280S003SP | FS | 11 Sep 2014 | 2 - 3 | SW8270C-SIM | PAH | 2-Methylnaphthalene | 11 U | 11 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1280 | BVBS1280S003SP | FS | 11 Sep 2014 | 2 - 3 | SW8270C-SIM | PAH | Acenaphthene | 11 U | 11 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1280 | BVBS1280S003SP | FS | 11 Sep 2014 | 2 - 3 | SW8270C-SIM | PAH | Acenaphthylene | 11 U | 11 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1280 | BVBS1280S003SP | FS | 11 Sep 2014 | 2 - 3 | SW8270C-SIM | PAH | Anthracene | 11 U | 11 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1280 | BVBS1280S003SP | FS | 11 Sep 2014 | 2 - 3 | SW8270C-SIM | PAH | Benzo(a)anthracene | 11 U | 11 | 11 | | µg/kg | | NC |
| SO | BVBS1280 | BVBS1280S003SP | FS | 11 Sep 2014 | 2 - 3 | SW8270C-SIM | PAH | Benzo(a)pyrene | 11 U | 11 | 11 | | µg/kg | | NC |
| SO | BVBS1280 | BVBS1280S003SP | FS | 11 Sep 2014 | 2 - 3 | SW8270C-SIM | PAH | Benzo(b)fluoranthene | 11 U | 11 | 11 | | µg/kg | | NC |
| SO | BVBS1280 | BVBS1280S003SP | FS | 11 Sep 2014 | 2 - 3 | SW8270C-SIM | PAH | Benzo(ghi)perylene | 11 U | 11 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1280 | BVBS1280S003SP | FS | 11 Sep 2014 | 2 - 3 | SW8270C-SIM | PAH | Benzo(k)fluoranthene | 11 U | 11 | 11 | | µg/kg | | NC |
| SO | BVBS1280 | BVBS1280S003SP | FS | 11 Sep 2014 | 2 - 3 | SW8270C-SIM | PAH | Chrysene | 11 U | 11 | 11 | | µg/kg | | NC |
| SO | BVBS1280 | BVBS1280S003SP | FS | 11 Sep 2014 | 2 - 3 | SW8270C-SIM | PAH | Dibenzo(a,h)anthracene | 11 U | 11 | 11 | | µg/kg | | NC |
| SO | BVBS1280 | BVBS1280S003SP | FS | 11 Sep 2014 | 2 - 3 | SW8270C-SIM | PAH | Fluoranthene | 11 U | 11 | 11 | 5.2 | µg/kg | X | RL |
| SO | BVBS1280 | BVBS1280S003SP | FS | 11 Sep 2014 | 2 - 3 | SW8270C-SIM | PAH | Fluorene | 11 U | 11 | 11 | 3.8 | µg/kg | X | RL |
| SO | BVBS1280 | BVBS1280S003SP | FS | 11 Sep 2014 | 2 - 3 | SW8270C-SIM | PAH | Indeno(1,2,3-cd)pyrene | 11 U | 11 | 11 | | µg/kg | | NC |
| SO | BVBS1280 | BVBS1280S003SP | FS | 11 Sep 2014 | 2 - 3 | SW8270C-SIM | PAH | Naphthalene | 11 U | 11 | 11 | 3.6 | µg/kg | X | RL |
| SO | BVBS1280 | BVBS1280S003SP | FS | 11 Sep 2014 | 2 - 3 | SW8270C-SIM | PAH | PAHTEQM | 0 U | | | 4.47 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S003SP | FS | 11 Sep 2014 | 2 - 3 | SW8270C-SIM | PAH | Phenanthrene | 11 U | 11 | 11 | 3.9 | µg/kg | X | RL |
| SO | BVBS1280 | BVBS1280S003SP | FS | 11 Sep 2014 | 2 - 3 | SW8270C-SIM | PAH | Pyrene | 11 U | 11 | 11 | 5.6 | µg/kg | X | RL |
| SO | BVBS1280 | BVBS1280S003SP | FS | 11 Sep 2014 | 2 - 3 | SW8270C-SIM | PHTH | Bis(2-ethylhexyl)phthalate | 8.6 J | 4.3 | 11 | 61 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S003SP | FS | 11 Sep 2014 | 2 - 3 | SW8270C-SIM | PHTH | Butyl benzyl phthalate | 11 U | 11 | 11 | 100 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S003SP | FS | 11 Sep 2014 | 2 - 3 | SW8270C-SIM | PHTH | Diethyl phthalate | 11 U | 11 | 11 | 27 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S003SP | FS | 11 Sep 2014 | 2 - 3 | SW8270C-SIM | PHTH | Dimethyl phthalate | 240 = | 11 | 11 | 27 | µg/kg | X | Y |
| SO | BVBS1280 | BVBS1280S003SP | FS | 11 Sep 2014 | 2 - 3 | SW8270C-SIM | PHTH | Di-n-butyl phthalate | 11 U | 11 | 11 | 27 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S003SP | FS | 11 Sep 2014 | 2 - 3 | SW8270C-SIM | PHTH | Di-n-octyl phthalate | 11 U | 11 | 11 | 27 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S003SP | FS | 11 Sep 2014 | 2 - 3 | SW8270C-SIM | SVOC | n-Nitrosodimethylamine | 11 U | 11 | 11 | 10 | µg/kg | X | RL |
| SO | BVBS1280 | BVBS1280S003SP | FS | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | 1,1,1,2-Tetrachloroethane | 0.29 U | 0.6 | 6 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S003SP | FS | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | 1,1,1-Trichloroethane | 0.81 J | 0.27 | 6 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S003SP | FS | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | 1,1,2,2-Tetrachloroethane | 0.41 U | 0.6 | 24 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S003SP | FS | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | 1,1,2-Trichloro-1,2,2-trifluoroethane | 0.42 U | 0.6 | 6 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S003SP | FS | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | 1,1,2-Trichloroethane | 0.42 U | 0.6 | 6 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S003SP | FS | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | 1,1-Dichloroethane | 0.25 U | 0.6 | 6 | 5 | µg/kg | | N |

APPENDIX D-1

**Test Stand Biovent Analytical Data**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | FSP SL | Units | FSP Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1280 | BVBS1280S003SP | FS | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | 1,1-Dichloroethene | 0.41 U | 0.6 | 6 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S003SP | FS | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | 1,1-Dichloropropene | 0.39 U | 0.6 | 6 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S003SP | FS | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | 1,2,3-Trichlorobenzene | 1.1 U | 2.4 | 24 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S003SP | FS | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | 1,2,3-Trichloropropane | 0.99 U | 2.4 | 6 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S003SP | FS | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | 1,2,4-Trichlorobenzene | 0.37 U | 0.6 | 24 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S003SP | FS | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | 1,2,4-Trimethylbenzene | 0.7 U | 2.4 | 12 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S003SP | FS | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | 1,2-Dibromo-3-chloropropane | 2.1 U | 2.4 | 12 | 10 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S003SP | FS | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | 1,2-Dibromoethane (EDB) | 0.3 U | 0.6 | 12 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S003SP | FS | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | 1,2-Dichlorobenzene | 0.27 U | 0.6 | 6 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S003SP | FS | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | 1,2-Dichloroethane | 0.37 U | 0.6 | 6 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S003SP | FS | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | 1,2-Dichloropropane | 0.52 U | 0.6 | 6 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S003SP | FS | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | 1,3,5-Trimethylbenzene | 0.66 U | 2.4 | 12 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S003SP | FS | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | 1,3-Dichlorobenzene | 0.21 U | 0.6 | 6 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S003SP | FS | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | 1,3-Dichloropropane | 0.3 U | 0.6 | 6 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S003SP | FS | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | 1,4-Dichlorobenzene | 0.27 U | 0.6 | 6 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S003SP | FS | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | 2-Butanone (MEK) | 4.5 U | 6 | 12 | 20 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S003SP | FS | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | 2-Chloro-1,1,1-trifluoroethane | 0.74 U | 6 | 6 | 10 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S003SP | FS | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | 2-Chloroethyl vinyl ether | 10 U | 60 | 60 | 10 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S003SP | FS | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | 2-Chlorotoluene | 0.28 U | 0.6 | 12 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S003SP | FS | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | 2-Hexanone | 2.1 U | 2.4 | 12 | 10 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S003SP | FS | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | 4-Chlorotoluene | 0.25 U | 0.6 | 12 | 10 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S003SP | FS | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | 4-Methyl-2-pentanone (MIBK) | 5.2 U | 6 | 12 | 10 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S003SP | FS | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | Acetone | 7.4 U | 12 | 24 | 20 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S003SP | FS | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | Benzene | 0.15 U | 0.24 | 0.6 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S003SP | FS | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | Bromobenzene | 0.25 U | 0.6 | 24 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S003SP | FS | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | Bromochloromethane | 0.82 U | 2.4 | 6 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S003SP | FS | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | Bromodichloromethane | 0.28 U | 0.6 | 6 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S003SP | FS | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | Bromoform | 0.95 U | 2.4 | 12 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S003SP | FS | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | Bromomethane | 11 U | 12 | 24 | 5 | µg/kg | X | RL |
| SO | BVBS1280 | BVBS1280S003SP | FS | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | Carbon tetrachloride | 0.34 U | 0.6 | 6 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S003SP | FS | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | Chlorobenzene | 0.27 U | 0.6 | 6 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S003SP | FS | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | Chloroethane | 1.8 U | 2.4 | 12 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S003SP | FS | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | Chloromethane | 0.36 U | 0.6 | 12 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S003SP | FS | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | Chlorotrifluoroethylene | 1.4 U | 6 | 6 | 10 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S003SP | FS | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | cis-1,2-Dichloroethene | 0.33 U | 0.6 | 6 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S003SP | FS | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | cis-1,3-Dichloropropene | 0.3 U | 0.6 | 6 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S003SP | FS | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | Dibromochloromethane | 0.68 U | 2.4 | 12 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S003SP | FS | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | Dibromomethane | 0.92 U | 2.4 | 6 | 5 | µg/kg | | N |

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**Test Stand Biovent Analytical Data**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | FSP SL | Units | FSP Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1280 | BVBS1280S003SP | FS | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | Dichlorodifluoromethane | 0.53 U | 0.6 | 12 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S003SP | FS | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | Ethylbenzene | 0.18 U | 0.24 | 12 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S003SP | FS | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | Hexachlorobutadiene | 0.38 U | 0.6 | 24 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S003SP | FS | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | Isopropylbenzene | 0.65 U | 2.4 | 12 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S003SP | FS | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | m,p-Xylenes | 0.32 U | 0.48 | 24 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S003SP | FS | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | Methylene chloride | 1.6 U | 2.4 | 6 | 10 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S003SP | FS | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | Methyl-tert-butyl Ether (MTBE) | 0.35 U | 0.6 | 6 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S003SP | FS | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | n-butylbenzene | 0.19 U | 0.24 | 24 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S003SP | FS | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | n-Propylbenzene | 0.6 U | 2.4 | 12 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S003SP | FS | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | o-Xylene | 0.66 U | 2.4 | 12 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S003SP | FS | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | p-Isopropyltoluene | 0.75 U | 2.4 | 24 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S003SP | FS | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | sec-Butylbenzene | 0.69 U | 2.4 | 24 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S003SP | FS | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | Styrene | 0.72 U | 2.4 | 24 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S003SP | FS | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | tert-Butylbenzene | 0.18 U | 0.24 | 24 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S003SP | FS | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | Tetrachloroethene | 0.25 U | 0.6 | 6 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S003SP | FS | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | Toluene | 0.62 U | 2.4 | 6 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S003SP | FS | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | trans-1,2-Dichloroethene | 0.6 U | 2.4 | 6 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S003SP | FS | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | trans-1,3-Dichloropropene | 0.72 U | 2.4 | 12 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S003SP | FS | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | Trichloroethene | 8.8 = | 0.6 | 6 | 5 | µg/kg | X | Y |
| SO | BVBS1280 | BVBS1280S003SP | FS | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | Trichlorofluoromethane | 0.45 U | 0.6 | 6 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S003SP | FS | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | Trichloromethane (Chloroform) | 0.29 U | 0.6 | 6 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S003SP | FS | 11 Sep 2014 | 2 - 3 | SW8260B | VOC | Vinyl chloride | 0.6 U | 2.4 | 12 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S004 | N | 11 Sep 2014 | 3.5 - 4.9 | SW9045D | GENCHEM | pH | 7.87 = | | | | PH UNITS | | NC |
| SO | BVBS1280 | BVBS1280S004 | N | 11 Sep 2014 | 3.5 - 4.9 | Walkley-Black | GENCHEM | Total Organic Carbon | 652 U | 652 | 652 | | mg/kg | | NC |
| SO | BVBS1280 | BVBS1280S004 | N | 11 Sep 2014 | 3.5 - 4.9 | M8015D | HC | Diesel Range Organics (C12-C14) | 5400 U | 2700 | 5400 | 5000 | µg/kg | X | N |
| SO | BVBS1280 | BVBS1280S004 | N | 11 Sep 2014 | 3.5 - 4.9 | M8015D | HC | Diesel Range Organics (C15-C20) | 5400 U | 2700 | 5400 | 5000 | µg/kg | X | N |
| SO | BVBS1280 | BVBS1280S004 | N | 11 Sep 2014 | 3.5 - 4.9 | M8015D | HC | Diesel Range Organics (C21-C30) | 5400 U | 2700 | 5400 | 5000 | µg/kg | X | N |
| SO | BVBS1280 | BVBS1280S004 | N | 11 Sep 2014 | 3.5 - 4.9 | M8015D | HC | Diesel Range Organics (C8-C11) | 5400 U | 2700 | 5400 | 1000 | µg/kg | X | RL |
| SO | BVBS1280 | BVBS1280S004 | N | 11 Sep 2014 | 3.5 - 4.9 | SW8015B | HC | GRO (C6-C12) | 1300 U | 630 | 1300 | 1000 | µg/kg | X | N |
| SO | BVBS1280 | BVBS1280S004 | N | 11 Sep 2014 | 3.5 - 4.9 | M8015D | HC | ORO (C31-C40) | 11000 U | 5400 | 11000 | 10000 | µg/kg | X | N |
| SO | BVBS1280 | BVBS1280S004 | N | 11 Sep 2014 | 3.5 - 4.9 | M8015D | HC | TOTAL EFH(C8-C40) | 5400 U | 2700 | 5400 | 10000 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S004 | N | 11 Sep 2014 | 3.5 - 4.9 | SW8270C-SIM | PAH | 1-Methylnaphthalene | 11 U | 5.4 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1280 | BVBS1280S004 | N | 11 Sep 2014 | 3.5 - 4.9 | SW8270C-SIM | PAH | 2-Methylnaphthalene | 11 U | 5.4 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1280 | BVBS1280S004 | N | 11 Sep 2014 | 3.5 - 4.9 | SW8270C-SIM | PAH | Acenaphthene | 11 U | 5.4 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1280 | BVBS1280S004 | N | 11 Sep 2014 | 3.5 - 4.9 | SW8270C-SIM | PAH | Acenaphthylene | 11 U | 5.4 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1280 | BVBS1280S004 | N | 11 Sep 2014 | 3.5 - 4.9 | SW8270C-SIM | PAH | Anthracene | 11 U | 5.4 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1280 | BVBS1280S004 | N | 11 Sep 2014 | 3.5 - 4.9 | SW8270C-SIM | PAH | Benzo(a)anthracene | 11 U | 5.4 | 11 | | µg/kg | | NC |
| SO | BVBS1280 | BVBS1280S004 | N | 11 Sep 2014 | 3.5 - 4.9 | SW8270C-SIM | PAH | Benzo(a)pyrene | 11 U | 5.4 | 11 | | µg/kg | | NC |

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**Test Stand Biovent Analytical Data**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | FSP SL | Units | FSP Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1280 | BVBS1280S004 | N | 11 Sep 2014 | 3.5 - 4.9 | SW8270C-SIM | PAH | Benzo(b)fluoranthene | 11 U | 5.4 | 11 | | µg/kg | | NC |
| SO | BVBS1280 | BVBS1280S004 | N | 11 Sep 2014 | 3.5 - 4.9 | SW8270C-SIM | PAH | Benzo(ghi)perylene | 11 U | 5.4 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1280 | BVBS1280S004 | N | 11 Sep 2014 | 3.5 - 4.9 | SW8270C-SIM | PAH | Benzo(k)fluoranthene | 11 U | 5.4 | 11 | | µg/kg | | NC |
| SO | BVBS1280 | BVBS1280S004 | N | 11 Sep 2014 | 3.5 - 4.9 | SW8270C-SIM | PAH | Chrysene | 11 U | 5.4 | 11 | | µg/kg | | NC |
| SO | BVBS1280 | BVBS1280S004 | N | 11 Sep 2014 | 3.5 - 4.9 | SW8270C-SIM | PAH | Dibenzo(a,h)anthracene | 11 U | 5.4 | 11 | | µg/kg | | NC |
| SO | BVBS1280 | BVBS1280S004 | N | 11 Sep 2014 | 3.5 - 4.9 | SW8270C-SIM | PAH | Fluoranthene | 11 U | 5.4 | 11 | 5.2 | µg/kg | X | RL |
| SO | BVBS1280 | BVBS1280S004 | N | 11 Sep 2014 | 3.5 - 4.9 | SW8270C-SIM | PAH | Fluorene | 11 U | 5.4 | 11 | 3.8 | µg/kg | X | RL |
| SO | BVBS1280 | BVBS1280S004 | N | 11 Sep 2014 | 3.5 - 4.9 | SW8270C-SIM | PAH | Indeno(1,2,3-cd)pyrene | 11 U | 5.4 | 11 | | µg/kg | | NC |
| SO | BVBS1280 | BVBS1280S004 | N | 11 Sep 2014 | 3.5 - 4.9 | SW8270C-SIM | PAH | Naphthalene | 11 U | 5.4 | 11 | 3.6 | µg/kg | X | RL |
| SO | BVBS1280 | BVBS1280S004 | N | 11 Sep 2014 | 3.5 - 4.9 | SW8270C-SIM | PAH | PAHTEQM | 0 U | | | 4.47 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S004 | N | 11 Sep 2014 | 3.5 - 4.9 | SW8270C-SIM | PAH | Phenanthrene | 11 U | 5.4 | 11 | 3.9 | µg/kg | X | RL |
| SO | BVBS1280 | BVBS1280S004 | N | 11 Sep 2014 | 3.5 - 4.9 | SW8270C-SIM | PAH | Pyrene | 11 U | 5.4 | 11 | 5.6 | µg/kg | X | N |
| SO | BVBS1280 | BVBS1280S004 | N | 11 Sep 2014 | 3.5 - 4.9 | SW8270C-SIM | PHTH | Bis(2-ethylhexyl)phthalate | 22 U | 11 | 22 | 61 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S004 | N | 11 Sep 2014 | 3.5 - 4.9 | SW8270C-SIM | PHTH | Butyl benzyl phthalate | 22 U | 11 | 22 | 100 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S004 | N | 11 Sep 2014 | 3.5 - 4.9 | SW8270C-SIM | PHTH | Diethyl phthalate | 22 U | 11 | 22 | 27 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S004 | N | 11 Sep 2014 | 3.5 - 4.9 | SW8270C-SIM | PHTH | Dimethyl phthalate | 22 U | 11 | 22 | 27 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S004 | N | 11 Sep 2014 | 3.5 - 4.9 | SW8270C-SIM | PHTH | Di-n-butyl phthalate | 22 U | 11 | 22 | 27 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S004 | N | 11 Sep 2014 | 3.5 - 4.9 | SW8270C-SIM | PHTH | Di-n-octyl phthalate | 22 U | 11 | 22 | 27 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S004 | N | 11 Sep 2014 | 3.5 - 4.9 | SW8260B | SVOC | Diisopropyl ether | 1.2 U | 1.2 | 12 | 10 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S004 | N | 11 Sep 2014 | 3.5 - 4.9 | SW8270C-SIM | SVOC | n-Nitrosodimethylamine | 22 U | 11 | 22 | 10 | µg/kg | X | RL |
| SO | BVBS1280 | BVBS1280S004 | N | 11 Sep 2014 | 3.5 - 4.9 | SW8260B | SVOC | tert-Amyl methyl ether | 1.2 U | 1.2 | 6 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S004 | N | 11 Sep 2014 | 3.5 - 4.9 | SW8260B | SVOC | tert-Butyl alcohol | 12 U | 12 | 60 | 50 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S004 | N | 11 Sep 2014 | 3.5 - 4.9 | SW8260B | SVOC | tert-Butyl ethyl ether | 1.2 U | 1.2 | 6 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S004 | N | 11 Sep 2014 | 3.5 - 4.9 | SW8260B | VOC | 1,1,1,2-Tetrachloroethane | 1.2 U | 1.2 | 6 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S004 | N | 11 Sep 2014 | 3.5 - 4.9 | SW8260B | VOC | 1,1,1-Trichloroethane | 1.2 U | 1.2 | 6 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S004 | N | 11 Sep 2014 | 3.5 - 4.9 | SW8260B | VOC | 1,1,2,2-Tetrachloroethane | 1.2 U | 1.2 | 6 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S004 | N | 11 Sep 2014 | 3.5 - 4.9 | SW8260B | VOC | 1,1,2-Trichloro-1,2,2-trifluoroethane | 2.4 U | 2.4 | 6 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S004 | N | 11 Sep 2014 | 3.5 - 4.9 | SW8260B | VOC | 1,1,2-Trichloroethane | 1.2 U | 1.2 | 6 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S004 | N | 11 Sep 2014 | 3.5 - 4.9 | SW8260B | VOC | 1,1-Dichloroethane | 1.2 U | 1.2 | 6 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S004 | N | 11 Sep 2014 | 3.5 - 4.9 | SW8260B | VOC | 1,1-Dichloroethene | 1.2 U | 1.2 | 6 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S004 | N | 11 Sep 2014 | 3.5 - 4.9 | SW8260B | VOC | 1,1-Dichloropropene | 1.2 U | 1.2 | 6 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S004 | N | 11 Sep 2014 | 3.5 - 4.9 | SW8260B | VOC | 1,2,3-Trichlorobenzene | 2.4 U | 2.4 | 6 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S004 | N | 11 Sep 2014 | 3.5 - 4.9 | SW8260B | VOC | 1,2,3-Trichloropropane | 2.4 U | 2.4 | 6 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S004 | N | 11 Sep 2014 | 3.5 - 4.9 | SW8260B | VOC | 1,2,4-Trichlorobenzene | 2.4 U | 2.4 | 6 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S004 | N | 11 Sep 2014 | 3.5 - 4.9 | SW8260B | VOC | 1,2,4-Trimethylbenzene | 1.2 U | 1.2 | 6 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S004 | N | 11 Sep 2014 | 3.5 - 4.9 | SW8260B | VOC | 1,2-Dibromo-3-chloropropane | 2.4 U | 2.4 | 12 | 10 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S004 | N | 11 Sep 2014 | 3.5 - 4.9 | SW8260B | VOC | 1,2-Dibromoethane (EDB) | 1.2 U | 1.2 | 6 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S004 | N | 11 Sep 2014 | 3.5 - 4.9 | SW8260B | VOC | 1,2-Dichlorobenzene | 1.2 U | 1.2 | 6 | 5 | µg/kg | | N |

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**Test Stand Biovent Analytical Data**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | FSP SL | Units | FSP Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1280 | BVBS1280S004 | N | 11 Sep 2014 | 3.5 - 4.9 | SW8260B | VOC | 1,2-Dichloroethane | 1.2 U | 1.2 | 6 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S004 | N | 11 Sep 2014 | 3.5 - 4.9 | SW8260B | VOC | 1,2-Dichloropropane | 1.2 U | 1.2 | 6 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S004 | N | 11 Sep 2014 | 3.5 - 4.9 | SW8260B | VOC | 1,3,5-Trimethylbenzene | 1.2 U | 1.2 | 6 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S004 | N | 11 Sep 2014 | 3.5 - 4.9 | SW8260B | VOC | 1,3-Dichlorobenzene | 1.2 U | 1.2 | 6 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S004 | N | 11 Sep 2014 | 3.5 - 4.9 | SW8260B | VOC | 1,3-Dichloropropane | 1.2 U | 1.2 | 6 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S004 | N | 11 Sep 2014 | 3.5 - 4.9 | SW8260B | VOC | 1,4-Dichlorobenzene | 1.2 U | 1.2 | 6 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S004 | N | 11 Sep 2014 | 3.5 - 4.9 | SW8260B | VOC | 2,2-Dichloropropane | 2.4 U | 2.4 | 6 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S004 | N | 11 Sep 2014 | 3.5 - 4.9 | SW8260B | VOC | 2-Butanone (MEK) | 6 U | 6 | 24 | 20 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S004 | N | 11 Sep 2014 | 3.5 - 4.9 | SW8260B | VOC | 2-Chloro-1,1,1-trifluoroethane | 2.4 U | 2.4 | 12 | 10 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S004 | N | 11 Sep 2014 | 3.5 - 4.9 | SW8260B | VOC | 2-Chloroethyl vinyl ether | 2.4 U | 2.4 | 12 | 10 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S004 | N | 11 Sep 2014 | 3.5 - 4.9 | SW8260B | VOC | 2-Chlorotoluene | 1.2 U | 1.2 | 6 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S004 | N | 11 Sep 2014 | 3.5 - 4.9 | SW8260B | VOC | 2-Hexanone | 6 U | 6 | 12 | 10 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S004 | N | 11 Sep 2014 | 3.5 - 4.9 | SW8260B | VOC | 4-Chlorotoluene | 1.2 U | 1.2 | 12 | 10 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S004 | N | 11 Sep 2014 | 3.5 - 4.9 | SW8260B | VOC | 4-Methyl-2-pentanone (MIBK) | 6 U | 6 | 12 | 10 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S004 | N | 11 Sep 2014 | 3.5 - 4.9 | SW8260B | VOC | Acetone | 6 U | 6 | 24 | 20 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S004 | N | 11 Sep 2014 | 3.5 - 4.9 | SW8260B | VOC | Benzene | 1.2 U | 1.2 | 6 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S004 | N | 11 Sep 2014 | 3.5 - 4.9 | SW8260B | VOC | Bromobenzene | 1.2 U | 1.2 | 6 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S004 | N | 11 Sep 2014 | 3.5 - 4.9 | SW8260B | VOC | Bromochloromethane | 1.2 U | 1.2 | 6 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S004 | N | 11 Sep 2014 | 3.5 - 4.9 | SW8260B | VOC | Bromodichloromethane | 1.2 U | 1.2 | 6 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S004 | N | 11 Sep 2014 | 3.5 - 4.9 | SW8260B | VOC | Bromoform | 2.4 U | 2.4 | 6 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S004 | N | 11 Sep 2014 | 3.5 - 4.9 | SW8260B | VOC | Bromomethane | 2.4 U | 2.4 | 6 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S004 | N | 11 Sep 2014 | 3.5 - 4.9 | SW8260B | VOC | Carbon tetrachloride | 1.2 U | 1.2 | 6 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S004 | N | 11 Sep 2014 | 3.5 - 4.9 | SW8260B | VOC | Chlorobenzene | 1.2 U | 1.2 | 6 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S004 | N | 11 Sep 2014 | 3.5 - 4.9 | SW8260B | VOC | Chloroethane | 2.4 U | 2.4 | 6 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S004 | N | 11 Sep 2014 | 3.5 - 4.9 | SW8260B | VOC | Chloromethane | 2.4 U | 2.4 | 6 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S004 | N | 11 Sep 2014 | 3.5 - 4.9 | SW8260B | VOC | Chlorotrifluoroethylene | 2.4 U | 2.4 | 12 | 10 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S004 | N | 11 Sep 2014 | 3.5 - 4.9 | SW8260B | VOC | cis-1,2-Dichloroethene | 1.2 U | 1.2 | 6 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S004 | N | 11 Sep 2014 | 3.5 - 4.9 | SW8260B | VOC | cis-1,3-Dichloropropene | 1.2 U | 1.2 | 6 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S004 | N | 11 Sep 2014 | 3.5 - 4.9 | SW8260B | VOC | Dibromochloromethane | 1.2 U | 1.2 | 6 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S004 | N | 11 Sep 2014 | 3.5 - 4.9 | SW8260B | VOC | Dibromomethane | 1.2 U | 1.2 | 6 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S004 | N | 11 Sep 2014 | 3.5 - 4.9 | SW8260B | VOC | Dichlorodifluoromethane | 2.4 U | 2.4 | 6 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S004 | N | 11 Sep 2014 | 3.5 - 4.9 | SW8260B | VOC | Ethylbenzene | 1.2 U | 1.2 | 6 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S004 | N | 11 Sep 2014 | 3.5 - 4.9 | SW8260B | VOC | Hexachlorobutadiene | 2.4 U | 2.4 | 6 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S004 | N | 11 Sep 2014 | 3.5 - 4.9 | SW8260B | VOC | Isopropylbenzene | 1.2 U | 1.2 | 6 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S004 | N | 11 Sep 2014 | 3.5 - 4.9 | SW8260B | VOC | m,p-Xylenes | 2.4 U | 2.4 | 6 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S004 | N | 11 Sep 2014 | 3.5 - 4.9 | SW8260B | VOC | Methylene chloride | 2.4 U | 2.4 | 12 | 10 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S004 | N | 11 Sep 2014 | 3.5 - 4.9 | SW8260B | VOC | Methyl-tert-butyl Ether (MTBE) | 1.2 U | 1.2 | 6 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S004 | N | 11 Sep 2014 | 3.5 - 4.9 | SW8260B | VOC | n-butylbenzene | 1.2 U | 1.2 | 6 | 5 | µg/kg | | N |

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**Test Stand Biovent Analytical Data**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | FSP SL | Units | FSP Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1280 | BVBS1280S004 | N | 11 Sep 2014 | 3.5 - 4.9 | SW8260B | VOC | n-Propylbenzene | 1.2 U | 1.2 | 6 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S004 | N | 11 Sep 2014 | 3.5 - 4.9 | SW8260B | VOC | o-Xylene | 1.2 U | 1.2 | 6 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S004 | N | 11 Sep 2014 | 3.5 - 4.9 | SW8260B | VOC | p-Isopropyltoluene | 1.2 U | 1.2 | 6 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S004 | N | 11 Sep 2014 | 3.5 - 4.9 | SW8260B | VOC | sec-Butylbenzene | 1.2 U | 1.2 | 6 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S004 | N | 11 Sep 2014 | 3.5 - 4.9 | SW8260B | VOC | Styrene | 1.2 U | 1.2 | 6 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S004 | N | 11 Sep 2014 | 3.5 - 4.9 | SW8260B | VOC | tert-Butylbenzene | 1.2 U | 1.2 | 6 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S004 | N | 11 Sep 2014 | 3.5 - 4.9 | SW8260B | VOC | Tetrachloroethene | 1.2 U | 1.2 | 6 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S004 | N | 11 Sep 2014 | 3.5 - 4.9 | SW8260B | VOC | Toluene | 1.2 U | 1.2 | 6 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S004 | N | 11 Sep 2014 | 3.5 - 4.9 | SW8260B | VOC | trans-1,2-Dichloroethene | 1.2 U | 1.2 | 6 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S004 | N | 11 Sep 2014 | 3.5 - 4.9 | SW8260B | VOC | trans-1,3-Dichloropropene | 1.2 U | 1.2 | 6 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S004 | N | 11 Sep 2014 | 3.5 - 4.9 | SW8260B | VOC | Trichloroethene | 1.2 U | 1.2 | 6 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S004 | N | 11 Sep 2014 | 3.5 - 4.9 | SW8260B | VOC | Trichlorofluoromethane | 2.4 U | 2.4 | 6 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S004 | N | 11 Sep 2014 | 3.5 - 4.9 | SW8260B | VOC | Trichloromethane (Chloroform) | 1.2 U | 1.2 | 6 | 5 | µg/kg | | N |
| SO | BVBS1280 | BVBS1280S004 | N | 11 Sep 2014 | 3.5 - 4.9 | SW8260B | VOC | Vinyl chloride | 2.4 U | 2.4 | 6 | 5 | µg/kg | | N |
| SO | BVBS1281 | BVBS1281S001 | N | 14 Jul 2014 | 2 - 3 | SW9045D | GENCHEM | pH | 7.23 = | | | | PH UNITS | | NC |
| SO | BVBS1281 | BVBS1281S001 | N | 14 Jul 2014 | 2 - 3 | Walkley-Black | GENCHEM | Total Organic Carbon | 638 U | 638 | 638 | | mg/kg | | NC |
| SO | BVBS1281 | BVBS1281S001 | N | 14 Jul 2014 | 2 - 3 | M8015D | HC | Diesel Range Organics (C12-C14) | 5400 U | 2700 | 5400 | 5000 | µg/kg | X | N |
| SO | BVBS1281 | BVBS1281S001 | N | 14 Jul 2014 | 2 - 3 | M8015D | HC | Diesel Range Organics (C15-C20) | 5400 U | 2700 | 5400 | 5000 | µg/kg | X | N |
| SO | BVBS1281 | BVBS1281S001 | N | 14 Jul 2014 | 2 - 3 | M8015D | HC | Diesel Range Organics (C21-C30) | 5400 U | 2700 | 5400 | 5000 | µg/kg | X | N |
| SO | BVBS1281 | BVBS1281S001 | N | 14 Jul 2014 | 2 - 3 | M8015D | HC | Diesel Range Organics (C8-C11) | 5400 U | 2700 | 5400 | 1000 | µg/kg | X | RL |
| SO | BVBS1281 | BVBS1281S001 | N | 14 Jul 2014 | 2 - 3 | SW8015B | HC | GRO (C6-C12) | 1000 U | 520 | 1000 | 1000 | µg/kg | | N |
| SO | BVBS1281 | BVBS1281S001 | N | 14 Jul 2014 | 2 - 3 | M8015D | HC | ORO (C31-C40) | 11000 U | 5400 | 11000 | 10000 | µg/kg | X | N |
| SO | BVBS1281 | BVBS1281S001 | N | 14 Jul 2014 | 2 - 3 | M8015D | HC | TOTAL EFH(C8-C40) | 5400 U | 2700 | 5400 | 10000 | µg/kg | | N |
| SO | BVBS1281 | BVBS1281S001 | N | 14 Jul 2014 | 2 - 3 | SW8270C-SIM | PAH | 1-Methylnaphthalene | 11 U | 5.4 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1281 | BVBS1281S001 | N | 14 Jul 2014 | 2 - 3 | SW8270C-SIM | PAH | 2-Methylnaphthalene | 11 U | 5.4 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1281 | BVBS1281S001 | N | 14 Jul 2014 | 2 - 3 | SW8270C-SIM | PAH | Acenaphthene | 11 U | 5.4 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1281 | BVBS1281S001 | N | 14 Jul 2014 | 2 - 3 | SW8270C-SIM | PAH | Acenaphthylene | 11 U | 5.4 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1281 | BVBS1281S001 | N | 14 Jul 2014 | 2 - 3 | SW8270C-SIM | PAH | Anthracene | 11 U | 5.4 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1281 | BVBS1281S001 | N | 14 Jul 2014 | 2 - 3 | SW8270C-SIM | PAH | Benzo(a)anthracene | 11 U | 5.4 | 11 | | µg/kg | | NC |
| SO | BVBS1281 | BVBS1281S001 | N | 14 Jul 2014 | 2 - 3 | SW8270C-SIM | PAH | Benzo(a)pyrene | 11 U | 5.4 | 11 | | µg/kg | | NC |
| SO | BVBS1281 | BVBS1281S001 | N | 14 Jul 2014 | 2 - 3 | SW8270C-SIM | PAH | Benzo(b)fluoranthene | 11 U | 5.4 | 11 | | µg/kg | | NC |
| SO | BVBS1281 | BVBS1281S001 | N | 14 Jul 2014 | 2 - 3 | SW8270C-SIM | PAH | Benzo(ghi)perylene | 11 U | 5.4 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1281 | BVBS1281S001 | N | 14 Jul 2014 | 2 - 3 | SW8270C-SIM | PAH | Benzo(k)fluoranthene | 11 U | 5.4 | 11 | | µg/kg | | NC |
| SO | BVBS1281 | BVBS1281S001 | N | 14 Jul 2014 | 2 - 3 | SW8270C-SIM | PAH | Chrysene | 11 U | 5.4 | 11 | | µg/kg | | NC |
| SO | BVBS1281 | BVBS1281S001 | N | 14 Jul 2014 | 2 - 3 | SW8270C-SIM | PAH | Dibenzo(a,h)anthracene | 11 U | 5.4 | 11 | | µg/kg | | NC |
| SO | BVBS1281 | BVBS1281S001 | N | 14 Jul 2014 | 2 - 3 | SW8270C-SIM | PAH | Fluoranthene | 11 U | 5.4 | 11 | 5.2 | µg/kg | X | RL |
| SO | BVBS1281 | BVBS1281S001 | N | 14 Jul 2014 | 2 - 3 | SW8270C-SIM | PAH | Fluorene | 11 U | 5.4 | 11 | 3.8 | µg/kg | X | RL |
| SO | BVBS1281 | BVBS1281S001 | N | 14 Jul 2014 | 2 - 3 | SW8270C-SIM | PAH | Indeno(1,2,3-cd)pyrene | 11 U | 5.4 | 11 | | µg/kg | | NC |

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**Test Stand Biovent Analytical Data**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | FSP SL | Units | FSP Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1281 | BVBS1281S001 | N | 14 Jul 2014 | 2 - 3 | SW8270C-SIM | PAH | Naphthalene | 11 U | 5.4 | 11 | 3.6 | µg/kg | X | RL |
| SO | BVBS1281 | BVBS1281S001 | N | 14 Jul 2014 | 2 - 3 | SW8270C-SIM | PAH | PAHTEQM | 0 U | | | 4.47 | µg/kg | | N |
| SO | BVBS1281 | BVBS1281S001 | N | 14 Jul 2014 | 2 - 3 | SW8270C-SIM | PAH | Phenanthrene | 11 U | 5.4 | 11 | 3.9 | µg/kg | X | RL |
| SO | BVBS1281 | BVBS1281S001 | N | 14 Jul 2014 | 2 - 3 | SW8270C-SIM | PAH | Pyrene | 11 U | 5.4 | 11 | 5.6 | µg/kg | X | N |
| SO | BVBS1281 | BVBS1281S001 | N | 14 Jul 2014 | 2 - 3 | SW8270C-SIM | PHTH | Bis(2-ethylhexyl)phthalate | 22 U | 11 | 22 | 61 | µg/kg | | N |
| SO | BVBS1281 | BVBS1281S001 | N | 14 Jul 2014 | 2 - 3 | SW8270C-SIM | PHTH | Butyl benzyl phthalate | 22 U | 11 | 22 | 100 | µg/kg | | N |
| SO | BVBS1281 | BVBS1281S001 | N | 14 Jul 2014 | 2 - 3 | SW8270C-SIM | PHTH | Diethyl phthalate | 22 U | 11 | 22 | 27 | µg/kg | | N |
| SO | BVBS1281 | BVBS1281S001 | N | 14 Jul 2014 | 2 - 3 | SW8270C-SIM | PHTH | Dimethyl phthalate | 22 U | 11 | 22 | 27 | µg/kg | | N |
| SO | BVBS1281 | BVBS1281S001 | N | 14 Jul 2014 | 2 - 3 | SW8270C-SIM | PHTH | Di-n-butyl phthalate | 22 U | 11 | 22 | 27 | µg/kg | | N |
| SO | BVBS1281 | BVBS1281S001 | N | 14 Jul 2014 | 2 - 3 | SW8270C-SIM | PHTH | Di-n-octyl phthalate | 22 U | 11 | 22 | 27 | µg/kg | | N |
| SO | BVBS1281 | BVBS1281S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | SVOC | Diisopropyl ether | 0.98 U | 0.98 | 9.8 | 10 | µg/kg | | N |
| SO | BVBS1281 | BVBS1281S001 | N | 14 Jul 2014 | 2 - 3 | SW8270C-SIM | SVOC | n-Nitrosodimethylamine | 22 U | 11 | 22 | 10 | µg/kg | X | RL |
| SO | BVBS1281 | BVBS1281S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | SVOC | tert-Amyl methyl ether | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1281 | BVBS1281S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | SVOC | tert-Butyl alcohol | 9.8 U | 9.8 | 49 | 50 | µg/kg | | N |
| SO | BVBS1281 | BVBS1281S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | SVOC | tert-Butyl ethyl ether | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1281 | BVBS1281S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | 1,1,1,2-Tetrachloroethane | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1281 | BVBS1281S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | 1,1,1-Trichloroethane | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1281 | BVBS1281S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | 1,1,2,2-Tetrachloroethane | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1281 | BVBS1281S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | 1,1,2-Trichloro-1,2,2-trifluoroethane | 2 U | 2 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1281 | BVBS1281S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | 1,1,2-Trichloroethane | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1281 | BVBS1281S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | 1,1-Dichloroethane | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1281 | BVBS1281S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | 1,1-Dichloroethene | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1281 | BVBS1281S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | 1,1-Dichloropropene | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1281 | BVBS1281S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | 1,2,3-Trichlorobenzene | 2 U | 2 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1281 | BVBS1281S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | 1,2,3-Trichloropropane | 2 U | 2 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1281 | BVBS1281S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | 1,2,4-Trichlorobenzene | 2 U | 2 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1281 | BVBS1281S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | 1,2,4-Trimethylbenzene | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1281 | BVBS1281S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | 1,2-Dibromo-3-chloropropane | 2 U | 2 | 9.8 | 10 | µg/kg | | N |
| SO | BVBS1281 | BVBS1281S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | 1,2-Dibromoethane (EDB) | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1281 | BVBS1281S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | 1,2-Dichlorobenzene | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1281 | BVBS1281S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | 1,2-Dichloroethane | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1281 | BVBS1281S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | 1,2-Dichloropropane | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1281 | BVBS1281S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | 1,3,5-Trimethylbenzene | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1281 | BVBS1281S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | 1,3-Dichlorobenzene | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1281 | BVBS1281S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | 1,3-Dichloropropane | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1281 | BVBS1281S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | 1,4-Dichlorobenzene | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1281 | BVBS1281S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | 2,2-Dichloropropane | 2 U | 2 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1281 | BVBS1281S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | 2-Butanone (MEK) | 4.9 U | 4.9 | 20 | 20 | µg/kg | | N |

APPENDIX D-1

**Test Stand Biovent Analytical Data**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | FSP SL | Units | FSP Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1281 | BVBS1281S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | 2-Chloro-1,1,1-trifluoroethane | 2 U | 2 | 9.8 | 10 | µg/kg | | N |
| SO | BVBS1281 | BVBS1281S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | 2-Chloroethyl vinyl ether | 2 U | 2 | 9.8 | 10 | µg/kg | | N |
| SO | BVBS1281 | BVBS1281S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | 2-Chlorotoluene | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1281 | BVBS1281S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | 2-Hexanone | 4.9 U | 4.9 | 9.8 | 10 | µg/kg | | N |
| SO | BVBS1281 | BVBS1281S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | 4-Chlorotoluene | 0.98 U | 0.98 | 9.8 | 10 | µg/kg | | N |
| SO | BVBS1281 | BVBS1281S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | 4-Methyl-2-pentanone (MIBK) | 4.9 U | 4.9 | 9.8 | 10 | µg/kg | | N |
| SO | BVBS1281 | BVBS1281S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | Acetone | 4.9 U | 4.9 | 20 | 20 | µg/kg | | N |
| SO | BVBS1281 | BVBS1281S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | Benzene | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1281 | BVBS1281S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | Bromobenzene | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1281 | BVBS1281S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | Bromochloromethane | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1281 | BVBS1281S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | Bromodichloromethane | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1281 | BVBS1281S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | Bromoform | 2 U | 2 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1281 | BVBS1281S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | Bromomethane | 2 U | 2 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1281 | BVBS1281S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | Carbon tetrachloride | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1281 | BVBS1281S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | Chlorobenzene | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1281 | BVBS1281S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | Chloroethane | 2 U | 2 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1281 | BVBS1281S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | Chloromethane | 2 U | 2 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1281 | BVBS1281S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | Chlorotrifluoroethylene | 2 U | 2 | 9.8 | 10 | µg/kg | | N |
| SO | BVBS1281 | BVBS1281S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | cis-1,2-Dichloroethene | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1281 | BVBS1281S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | cis-1,3-Dichloropropene | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1281 | BVBS1281S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | Dibromochloromethane | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1281 | BVBS1281S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | Dibromomethane | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1281 | BVBS1281S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | Dichlorodifluoromethane | 2 U | 2 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1281 | BVBS1281S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | Ethylbenzene | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1281 | BVBS1281S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | Hexachlorobutadiene | 2 U | 2 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1281 | BVBS1281S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | Isopropylbenzene | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1281 | BVBS1281S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | m,p-Xylenes | 2 U | 2 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1281 | BVBS1281S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | Methylene chloride | 2 U | 2 | 9.8 | 10 | µg/kg | | N |
| SO | BVBS1281 | BVBS1281S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | Methyl-tert-butyl Ether (MTBE) | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1281 | BVBS1281S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | n-butylbenzene | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1281 | BVBS1281S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | n-Propylbenzene | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1281 | BVBS1281S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | o-Xylene | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1281 | BVBS1281S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | p-Isopropyltoluene | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1281 | BVBS1281S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | sec-Butylbenzene | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1281 | BVBS1281S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | Styrene | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1281 | BVBS1281S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | tert-Butylbenzene | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1281 | BVBS1281S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | Tetrachloroethene | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1281 | BVBS1281S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | Toluene | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |

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**Test Stand Biovent Analytical Data**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | FSP SL | Units | FSP Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1281 | BVBS1281S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | trans-1,2-Dichloroethene | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1281 | BVBS1281S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | trans-1,3-Dichloropropene | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1281 | BVBS1281S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | Trichloroethene | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1281 | BVBS1281S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | Trichlorofluoromethane | 2 U | 2 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1281 | BVBS1281S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | Trichloromethane (Chloroform) | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1281 | BVBS1281S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | Vinyl chloride | 2 U | 2 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1281 | BVBS1281S002 | N | 14 Jul 2014 | 4.5 - 5.3 | SW9045D | GENCHEM | pH | 6.56 = | | | | PH UNITS | | NC |
| SO | BVBS1281 | BVBS1281S002 | N | 14 Jul 2014 | 4.5 - 5.3 | Walkley-Black | GENCHEM | Total Organic Carbon | 658 U | 658 | 658 | | mg/kg | | NC |
| SO | BVBS1281 | BVBS1281S002 | N | 14 Jul 2014 | 4.5 - 5.3 | M8015D | HC | Diesel Range Organics (C12-C14) | 5600 U | 2800 | 5600 | 5000 | µg/kg | X | N |
| SO | BVBS1281 | BVBS1281S002 | N | 14 Jul 2014 | 4.5 - 5.3 | M8015D | HC | Diesel Range Organics (C15-C20) | 5600 U | 2800 | 5600 | 5000 | µg/kg | X | N |
| SO | BVBS1281 | BVBS1281S002 | N | 14 Jul 2014 | 4.5 - 5.3 | M8015D | HC | Diesel Range Organics (C21-C30) | 5600 U | 2800 | 5600 | 5000 | µg/kg | X | N |
| SO | BVBS1281 | BVBS1281S002 | N | 14 Jul 2014 | 4.5 - 5.3 | M8015D | HC | Diesel Range Organics (C8-C11) | 5600 U | 2800 | 5600 | 1000 | µg/kg | X | RL |
| SO | BVBS1281 | BVBS1281S002 | N | 14 Jul 2014 | 4.5 - 5.3 | SW8015B | HC | GRO (C6-C12) | 1000 U | 520 | 1000 | 1000 | µg/kg | | N |
| SO | BVBS1281 | BVBS1281S002 | N | 14 Jul 2014 | 4.5 - 5.3 | M8015D | HC | ORO (C31-C40) | 11000 U | 5600 | 11000 | 10000 | µg/kg | X | N |
| SO | BVBS1281 | BVBS1281S002 | N | 14 Jul 2014 | 4.5 - 5.3 | M8015D | HC | TOTAL EFH(C8-C40) | 5600 U | 2800 | 5600 | 10000 | µg/kg | | N |
| SO | BVBS1281 | BVBS1281S002 | N | 14 Jul 2014 | 4.5 - 5.3 | SW8270C-SIM | PAH | 1-Methylnaphthalene | 11 U | 5.6 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1281 | BVBS1281S002 | N | 14 Jul 2014 | 4.5 - 5.3 | SW8270C-SIM | PAH | 2-Methylnaphthalene | 11 U | 5.6 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1281 | BVBS1281S002 | N | 14 Jul 2014 | 4.5 - 5.3 | SW8270C-SIM | PAH | Acenaphthene | 11 U | 5.6 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1281 | BVBS1281S002 | N | 14 Jul 2014 | 4.5 - 5.3 | SW8270C-SIM | PAH | Acenaphthylene | 11 U | 5.6 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1281 | BVBS1281S002 | N | 14 Jul 2014 | 4.5 - 5.3 | SW8270C-SIM | PAH | Anthracene | 11 U | 5.6 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1281 | BVBS1281S002 | N | 14 Jul 2014 | 4.5 - 5.3 | SW8270C-SIM | PAH | Benzo(a)anthracene | 11 U | 5.6 | 11 | | µg/kg | | NC |
| SO | BVBS1281 | BVBS1281S002 | N | 14 Jul 2014 | 4.5 - 5.3 | SW8270C-SIM | PAH | Benzo(a)pyrene | 11 U | 5.6 | 11 | | µg/kg | | NC |
| SO | BVBS1281 | BVBS1281S002 | N | 14 Jul 2014 | 4.5 - 5.3 | SW8270C-SIM | PAH | Benzo(b)fluoranthene | 11 U | 5.6 | 11 | | µg/kg | | NC |
| SO | BVBS1281 | BVBS1281S002 | N | 14 Jul 2014 | 4.5 - 5.3 | SW8270C-SIM | PAH | Benzo(ghi)perylene | 11 U | 5.6 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1281 | BVBS1281S002 | N | 14 Jul 2014 | 4.5 - 5.3 | SW8270C-SIM | PAH | Benzo(k)fluoranthene | 11 U | 5.6 | 11 | | µg/kg | | NC |
| SO | BVBS1281 | BVBS1281S002 | N | 14 Jul 2014 | 4.5 - 5.3 | SW8270C-SIM | PAH | Chrysene | 11 U | 5.6 | 11 | | µg/kg | | NC |
| SO | BVBS1281 | BVBS1281S002 | N | 14 Jul 2014 | 4.5 - 5.3 | SW8270C-SIM | PAH | Dibenzo(a,h)anthracene | 11 U | 5.6 | 11 | | µg/kg | | NC |
| SO | BVBS1281 | BVBS1281S002 | N | 14 Jul 2014 | 4.5 - 5.3 | SW8270C-SIM | PAH | Fluoranthene | 11 U | 5.6 | 11 | 5.2 | µg/kg | X | RL |
| SO | BVBS1281 | BVBS1281S002 | N | 14 Jul 2014 | 4.5 - 5.3 | SW8270C-SIM | PAH | Fluorene | 11 U | 5.6 | 11 | 3.8 | µg/kg | X | RL |
| SO | BVBS1281 | BVBS1281S002 | N | 14 Jul 2014 | 4.5 - 5.3 | SW8270C-SIM | PAH | Indeno(1,2,3-cd)pyrene | 11 U | 5.6 | 11 | | µg/kg | | NC |
| SO | BVBS1281 | BVBS1281S002 | N | 14 Jul 2014 | 4.5 - 5.3 | SW8270C-SIM | PAH | Naphthalene | 11 U | 5.6 | 11 | 3.6 | µg/kg | X | RL |
| SO | BVBS1281 | BVBS1281S002 | N | 14 Jul 2014 | 4.5 - 5.3 | SW8270C-SIM | PAH | PAHTEQM | 0 U | | | 4.47 | µg/kg | | N |
| SO | BVBS1281 | BVBS1281S002 | N | 14 Jul 2014 | 4.5 - 5.3 | SW8270C-SIM | PAH | Phenanthrene | 11 U | 5.6 | 11 | 3.9 | µg/kg | X | RL |
| SO | BVBS1281 | BVBS1281S002 | N | 14 Jul 2014 | 4.5 - 5.3 | SW8270C-SIM | PAH | Pyrene | 11 U | 5.6 | 11 | 5.6 | µg/kg | X | N |
| SO | BVBS1281 | BVBS1281S002 | N | 14 Jul 2014 | 4.5 - 5.3 | SW8270C-SIM | PHTH | Bis(2-ethylhexyl)phthalate | 22 U | 11 | 22 | 61 | µg/kg | | N |
| SO | BVBS1281 | BVBS1281S002 | N | 14 Jul 2014 | 4.5 - 5.3 | SW8270C-SIM | PHTH | Butyl benzyl phthalate | 22 U | 11 | 22 | 100 | µg/kg | | N |
| SO | BVBS1281 | BVBS1281S002 | N | 14 Jul 2014 | 4.5 - 5.3 | SW8270C-SIM | PHTH | Diethyl phthalate | 22 U | 11 | 22 | 27 | µg/kg | | N |
| SO | BVBS1281 | BVBS1281S002 | N | 14 Jul 2014 | 4.5 - 5.3 | SW8270C-SIM | PHTH | Dimethyl phthalate | 22 U | 11 | 22 | 27 | µg/kg | | N |

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**Test Stand Biovent Analytical Data**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | FSP SL | Units | FSP Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1281 | BVBS1281S002 | N | 14 Jul 2014 | 4.5 - 5.3 | SW8270C-SIM | PHTH | Di-n-butyl phthalate | 22 U | 11 | 22 | 27 | µg/kg | | N |
| SO | BVBS1281 | BVBS1281S002 | N | 14 Jul 2014 | 4.5 - 5.3 | SW8270C-SIM | PHTH | Di-n-octyl phthalate | 22 U | 11 | 22 | 27 | µg/kg | | N |
| SO | BVBS1281 | BVBS1281S002 | N | 14 Jul 2014 | 4.5 - 5.3 | SW8260B | SVOC | Diisopropyl ether | 0.98 U | 0.98 | 9.8 | 10 | µg/kg | | N |
| SO | BVBS1281 | BVBS1281S002 | N | 14 Jul 2014 | 4.5 - 5.3 | SW8270C-SIM | SVOC | n-Nitrosodimethylamine | 22 U | 11 | 22 | 10 | µg/kg | X | RL |
| SO | BVBS1281 | BVBS1281S002 | N | 14 Jul 2014 | 4.5 - 5.3 | SW8260B | SVOC | tert-Amyl methyl ether | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1281 | BVBS1281S002 | N | 14 Jul 2014 | 4.5 - 5.3 | SW8260B | SVOC | tert-Butyl alcohol | 9.8 U | 9.8 | 49 | 50 | µg/kg | | N |
| SO | BVBS1281 | BVBS1281S002 | N | 14 Jul 2014 | 4.5 - 5.3 | SW8260B | SVOC | tert-Butyl ethyl ether | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1281 | BVBS1281S002 | N | 14 Jul 2014 | 4.5 - 5.3 | SW8260B | VOC | 1,1,1,2-Tetrachloroethane | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1281 | BVBS1281S002 | N | 14 Jul 2014 | 4.5 - 5.3 | SW8260B | VOC | 1,1,1-Trichloroethane | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1281 | BVBS1281S002 | N | 14 Jul 2014 | 4.5 - 5.3 | SW8260B | VOC | 1,1,2,2-Tetrachloroethane | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1281 | BVBS1281S002 | N | 14 Jul 2014 | 4.5 - 5.3 | SW8260B | VOC | 1,1,2-Trichloro-1,2,2-trifluoroethane | 2 U | 2 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1281 | BVBS1281S002 | N | 14 Jul 2014 | 4.5 - 5.3 | SW8260B | VOC | 1,1,2-Trichloroethane | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1281 | BVBS1281S002 | N | 14 Jul 2014 | 4.5 - 5.3 | SW8260B | VOC | 1,1-Dichloroethane | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1281 | BVBS1281S002 | N | 14 Jul 2014 | 4.5 - 5.3 | SW8260B | VOC | 1,1-Dichloroethene | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1281 | BVBS1281S002 | N | 14 Jul 2014 | 4.5 - 5.3 | SW8260B | VOC | 1,1-Dichloropropene | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1281 | BVBS1281S002 | N | 14 Jul 2014 | 4.5 - 5.3 | SW8260B | VOC | 1,2,3-Trichlorobenzene | 2 U | 2 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1281 | BVBS1281S002 | N | 14 Jul 2014 | 4.5 - 5.3 | SW8260B | VOC | 1,2,3-Trichloropropane | 2 U | 2 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1281 | BVBS1281S002 | N | 14 Jul 2014 | 4.5 - 5.3 | SW8260B | VOC | 1,2,4-Trichlorobenzene | 2 U | 2 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1281 | BVBS1281S002 | N | 14 Jul 2014 | 4.5 - 5.3 | SW8260B | VOC | 1,2,4-Trimethylbenzene | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1281 | BVBS1281S002 | N | 14 Jul 2014 | 4.5 - 5.3 | SW8260B | VOC | 1,2-Dibromo-3-chloropropane | 2 U | 2 | 9.8 | 10 | µg/kg | | N |
| SO | BVBS1281 | BVBS1281S002 | N | 14 Jul 2014 | 4.5 - 5.3 | SW8260B | VOC | 1,2-Dibromoethane (EDB) | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1281 | BVBS1281S002 | N | 14 Jul 2014 | 4.5 - 5.3 | SW8260B | VOC | 1,2-Dichlorobenzene | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1281 | BVBS1281S002 | N | 14 Jul 2014 | 4.5 - 5.3 | SW8260B | VOC | 1,2-Dichloroethane | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1281 | BVBS1281S002 | N | 14 Jul 2014 | 4.5 - 5.3 | SW8260B | VOC | 1,2-Dichloropropane | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1281 | BVBS1281S002 | N | 14 Jul 2014 | 4.5 - 5.3 | SW8260B | VOC | 1,3,5-Trimethylbenzene | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1281 | BVBS1281S002 | N | 14 Jul 2014 | 4.5 - 5.3 | SW8260B | VOC | 1,3-Dichlorobenzene | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1281 | BVBS1281S002 | N | 14 Jul 2014 | 4.5 - 5.3 | SW8260B | VOC | 1,3-Dichloropropane | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1281 | BVBS1281S002 | N | 14 Jul 2014 | 4.5 - 5.3 | SW8260B | VOC | 1,4-Dichlorobenzene | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1281 | BVBS1281S002 | N | 14 Jul 2014 | 4.5 - 5.3 | SW8260B | VOC | 2,2-Dichloropropane | 2 U | 2 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1281 | BVBS1281S002 | N | 14 Jul 2014 | 4.5 - 5.3 | SW8260B | VOC | 2-Butanone (MEK) | 4.9 U | 4.9 | 20 | 20 | µg/kg | | N |
| SO | BVBS1281 | BVBS1281S002 | N | 14 Jul 2014 | 4.5 - 5.3 | SW8260B | VOC | 2-Chloro-1,1,1-trifluoroethane | 2 U | 2 | 9.8 | 10 | µg/kg | | N |
| SO | BVBS1281 | BVBS1281S002 | N | 14 Jul 2014 | 4.5 - 5.3 | SW8260B | VOC | 2-Chloroethyl vinyl ether | 2 U | 2 | 9.8 | 10 | µg/kg | | N |
| SO | BVBS1281 | BVBS1281S002 | N | 14 Jul 2014 | 4.5 - 5.3 | SW8260B | VOC | 2-Chlorotoluene | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1281 | BVBS1281S002 | N | 14 Jul 2014 | 4.5 - 5.3 | SW8260B | VOC | 2-Hexanone | 4.9 U | 4.9 | 9.8 | 10 | µg/kg | | N |
| SO | BVBS1281 | BVBS1281S002 | N | 14 Jul 2014 | 4.5 - 5.3 | SW8260B | VOC | 4-Chlorotoluene | 0.98 U | 0.98 | 9.8 | 10 | µg/kg | | N |
| SO | BVBS1281 | BVBS1281S002 | N | 14 Jul 2014 | 4.5 - 5.3 | SW8260B | VOC | 4-Methyl-2-pentanone (MIBK) | 4.9 U | 4.9 | 9.8 | 10 | µg/kg | | N |
| SO | BVBS1281 | BVBS1281S002 | N | 14 Jul 2014 | 4.5 - 5.3 | SW8260B | VOC | Acetone | 4.9 U | 4.9 | 20 | 20 | µg/kg | | N |
| SO | BVBS1281 | BVBS1281S002 | N | 14 Jul 2014 | 4.5 - 5.3 | SW8260B | VOC | Benzene | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |

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**Test Stand Biovent Analytical Data**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | FSP SL | Units | FSP Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1281 | BVBS1281S002 | N | 14 Jul 2014 | 4.5 - 5.3 | SW8260B | VOC | Bromobenzene | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1281 | BVBS1281S002 | N | 14 Jul 2014 | 4.5 - 5.3 | SW8260B | VOC | Bromochloromethane | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1281 | BVBS1281S002 | N | 14 Jul 2014 | 4.5 - 5.3 | SW8260B | VOC | Bromodichloromethane | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1281 | BVBS1281S002 | N | 14 Jul 2014 | 4.5 - 5.3 | SW8260B | VOC | Bromoform | 2 U | 2 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1281 | BVBS1281S002 | N | 14 Jul 2014 | 4.5 - 5.3 | SW8260B | VOC | Bromomethane | 2 U | 2 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1281 | BVBS1281S002 | N | 14 Jul 2014 | 4.5 - 5.3 | SW8260B | VOC | Carbon tetrachloride | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1281 | BVBS1281S002 | N | 14 Jul 2014 | 4.5 - 5.3 | SW8260B | VOC | Chlorobenzene | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1281 | BVBS1281S002 | N | 14 Jul 2014 | 4.5 - 5.3 | SW8260B | VOC | Chloroethane | 2 U | 2 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1281 | BVBS1281S002 | N | 14 Jul 2014 | 4.5 - 5.3 | SW8260B | VOC | Chloromethane | 2 U | 2 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1281 | BVBS1281S002 | N | 14 Jul 2014 | 4.5 - 5.3 | SW8260B | VOC | Chlorotrifluoroethylene | 2 U | 2 | 9.8 | 10 | µg/kg | | N |
| SO | BVBS1281 | BVBS1281S002 | N | 14 Jul 2014 | 4.5 - 5.3 | SW8260B | VOC | cis-1,2-Dichloroethene | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1281 | BVBS1281S002 | N | 14 Jul 2014 | 4.5 - 5.3 | SW8260B | VOC | cis-1,3-Dichloropropene | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1281 | BVBS1281S002 | N | 14 Jul 2014 | 4.5 - 5.3 | SW8260B | VOC | Dibromochloromethane | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1281 | BVBS1281S002 | N | 14 Jul 2014 | 4.5 - 5.3 | SW8260B | VOC | Dibromomethane | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1281 | BVBS1281S002 | N | 14 Jul 2014 | 4.5 - 5.3 | SW8260B | VOC | Dichlorodifluoromethane | 2 U | 2 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1281 | BVBS1281S002 | N | 14 Jul 2014 | 4.5 - 5.3 | SW8260B | VOC | Ethylbenzene | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1281 | BVBS1281S002 | N | 14 Jul 2014 | 4.5 - 5.3 | SW8260B | VOC | Hexachlorobutadiene | 2 U | 2 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1281 | BVBS1281S002 | N | 14 Jul 2014 | 4.5 - 5.3 | SW8260B | VOC | Isopropylbenzene | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1281 | BVBS1281S002 | N | 14 Jul 2014 | 4.5 - 5.3 | SW8260B | VOC | m,p-Xylenes | 2 U | 2 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1281 | BVBS1281S002 | N | 14 Jul 2014 | 4.5 - 5.3 | SW8260B | VOC | Methylene chloride | 2 U | 2 | 9.8 | 10 | µg/kg | | N |
| SO | BVBS1281 | BVBS1281S002 | N | 14 Jul 2014 | 4.5 - 5.3 | SW8260B | VOC | Methyl-tert-butyl Ether (MTBE) | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1281 | BVBS1281S002 | N | 14 Jul 2014 | 4.5 - 5.3 | SW8260B | VOC | n-butylbenzene | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1281 | BVBS1281S002 | N | 14 Jul 2014 | 4.5 - 5.3 | SW8260B | VOC | n-Propylbenzene | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1281 | BVBS1281S002 | N | 14 Jul 2014 | 4.5 - 5.3 | SW8260B | VOC | o-Xylene | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1281 | BVBS1281S002 | N | 14 Jul 2014 | 4.5 - 5.3 | SW8260B | VOC | p-Isopropyltoluene | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1281 | BVBS1281S002 | N | 14 Jul 2014 | 4.5 - 5.3 | SW8260B | VOC | sec-Butylbenzene | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1281 | BVBS1281S002 | N | 14 Jul 2014 | 4.5 - 5.3 | SW8260B | VOC | Styrene | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1281 | BVBS1281S002 | N | 14 Jul 2014 | 4.5 - 5.3 | SW8260B | VOC | tert-Butylbenzene | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1281 | BVBS1281S002 | N | 14 Jul 2014 | 4.5 - 5.3 | SW8260B | VOC | Tetrachloroethene | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1281 | BVBS1281S002 | N | 14 Jul 2014 | 4.5 - 5.3 | SW8260B | VOC | Toluene | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1281 | BVBS1281S002 | N | 14 Jul 2014 | 4.5 - 5.3 | SW8260B | VOC | trans-1,2-Dichloroethene | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1281 | BVBS1281S002 | N | 14 Jul 2014 | 4.5 - 5.3 | SW8260B | VOC | trans-1,3-Dichloropropene | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1281 | BVBS1281S002 | N | 14 Jul 2014 | 4.5 - 5.3 | SW8260B | VOC | Trichloroethene | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1281 | BVBS1281S002 | N | 14 Jul 2014 | 4.5 - 5.3 | SW8260B | VOC | Trichlorofluoromethane | 2 U | 2 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1281 | BVBS1281S002 | N | 14 Jul 2014 | 4.5 - 5.3 | SW8260B | VOC | Trichloromethane (Chloroform) | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1281 | BVBS1281S002 | N | 14 Jul 2014 | 4.5 - 5.3 | SW8260B | VOC | Vinyl chloride | 2 U | 2 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1282 | BVBS1282S001 | N | 14 Jul 2014 | 1.5 - 2.5 | SW9045D | GENCHEM | pH | 8.83 = | | | | PH UNITS | | NC |
| SO | BVBS1282 | BVBS1282S001 | N | 14 Jul 2014 | 1.5 - 2.5 | Walkley-Black | GENCHEM | Total Organic Carbon | 625 U | 625 | 625 | | mg/kg | | NC |

APPENDIX D-1

**Test Stand Biovent Analytical Data**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | FSP SL | Units | FSP Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1282 | BVBS1282S001 | N | 14 Jul 2014 | 1.5 - 2.5 | M8015D | HC | Diesel Range Organics (C12-C14) | 5400 U | 2700 | 5400 | 5000 | µg/kg | X | N |
| SO | BVBS1282 | BVBS1282S001 | N | 14 Jul 2014 | 1.5 - 2.5 | M8015D | HC | Diesel Range Organics (C15-C20) | 5400 U | 2700 | 5400 | 5000 | µg/kg | X | N |
| SO | BVBS1282 | BVBS1282S001 | N | 14 Jul 2014 | 1.5 - 2.5 | M8015D | HC | Diesel Range Organics (C21-C30) | 5400 U | 2700 | 5400 | 5000 | µg/kg | X | N |
| SO | BVBS1282 | BVBS1282S001 | N | 14 Jul 2014 | 1.5 - 2.5 | M8015D | HC | Diesel Range Organics (C8-C11) | 5400 U | 2700 | 5400 | 1000 | µg/kg | X | RL |
| SO | BVBS1282 | BVBS1282S001 | N | 14 Jul 2014 | 1.5 - 2.5 | SW8015B | HC | GRO (C6-C12) | 1000 U | 510 | 1000 | 1000 | µg/kg | | N |
| SO | BVBS1282 | BVBS1282S001 | N | 14 Jul 2014 | 1.5 - 2.5 | M8015D | HC | ORO (C31-C40) | 11000 U | 5400 | 11000 | 10000 | µg/kg | X | N |
| SO | BVBS1282 | BVBS1282S001 | N | 14 Jul 2014 | 1.5 - 2.5 | M8015D | HC | TOTAL EFH(C8-C40) | 5400 U | 2700 | 5400 | 10000 | µg/kg | | N |
| SO | BVBS1282 | BVBS1282S001 | N | 14 Jul 2014 | 1.5 - 2.5 | SW8270C-SIM | PAH | 1-Methylnaphthalene | 11 U | 5.4 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1282 | BVBS1282S001 | N | 14 Jul 2014 | 1.5 - 2.5 | SW8270C-SIM | PAH | 2-Methylnaphthalene | 11 U | 5.4 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1282 | BVBS1282S001 | N | 14 Jul 2014 | 1.5 - 2.5 | SW8270C-SIM | PAH | Acenaphthene | 11 U | 5.4 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1282 | BVBS1282S001 | N | 14 Jul 2014 | 1.5 - 2.5 | SW8270C-SIM | PAH | Acenaphthylene | 11 U | 5.4 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1282 | BVBS1282S001 | N | 14 Jul 2014 | 1.5 - 2.5 | SW8270C-SIM | PAH | Anthracene | 16 = | 5.4 | 11 | 2.5 | µg/kg | X | Y |
| SO | BVBS1282 | BVBS1282S001 | N | 14 Jul 2014 | 1.5 - 2.5 | SW8270C-SIM | PAH | Benzo(a)anthracene | 59 = | 5.4 | 11 | | µg/kg | | NC |
| SO | BVBS1282 | BVBS1282S001 | N | 14 Jul 2014 | 1.5 - 2.5 | SW8270C-SIM | PAH | Benzo(a)pyrene | 45 = | 5.4 | 11 | | µg/kg | | NC |
| SO | BVBS1282 | BVBS1282S001 | N | 14 Jul 2014 | 1.5 - 2.5 | SW8270C-SIM | PAH | Benzo(b)fluoranthene | 53 = | 5.4 | 11 | | µg/kg | | NC |
| SO | BVBS1282 | BVBS1282S001 | N | 14 Jul 2014 | 1.5 - 2.5 | SW8270C-SIM | PAH | Benzo(ghi)perylene | 23 = | 5.4 | 11 | 2.5 | µg/kg | X | Y |
| SO | BVBS1282 | BVBS1282S001 | N | 14 Jul 2014 | 1.5 - 2.5 | SW8270C-SIM | PAH | Benzo(k)fluoranthene | 16 = | 5.4 | 11 | | µg/kg | | NC |
| SO | BVBS1282 | BVBS1282S001 | N | 14 Jul 2014 | 1.5 - 2.5 | SW8270C-SIM | PAH | Chrysene | 57 = | 5.4 | 11 | | µg/kg | | NC |
| SO | BVBS1282 | BVBS1282S001 | N | 14 Jul 2014 | 1.5 - 2.5 | SW8270C-SIM | PAH | Dibenzo(a,h)anthracene | 5.9 J | 5.4 | 11 | | µg/kg | | NC |
| SO | BVBS1282 | BVBS1282S001 | N | 14 Jul 2014 | 1.5 - 2.5 | SW8270C-SIM | PAH | Fluoranthene | 100 = | 5.4 | 11 | 5.2 | µg/kg | X | Y |
| SO | BVBS1282 | BVBS1282S001 | N | 14 Jul 2014 | 1.5 - 2.5 | SW8270C-SIM | PAH | Fluorene | 11 U | 5.4 | 11 | 3.8 | µg/kg | X | RL |
| SO | BVBS1282 | BVBS1282S001 | N | 14 Jul 2014 | 1.5 - 2.5 | SW8270C-SIM | PAH | Indeno(1,2,3-cd)pyrene | 19 = | 5.4 | 11 | | µg/kg | | NC |
| SO | BVBS1282 | BVBS1282S001 | N | 14 Jul 2014 | 1.5 - 2.5 | SW8270C-SIM | PAH | Naphthalene | 11 U | 5.4 | 11 | 3.6 | µg/kg | X | RL |
| SO | BVBS1282 | BVBS1282S001 | N | 14 Jul 2014 | 1.5 - 2.5 | SW8270C-SIM | PAH | PAHTEQM | 62.276 = | | | 4.47 | µg/kg | X | Y |
| SO | BVBS1282 | BVBS1282S001 | N | 14 Jul 2014 | 1.5 - 2.5 | SW8270C-SIM | PAH | Phenanthrene | 62 = | 5.4 | 11 | 3.9 | µg/kg | X | Y |
| SO | BVBS1282 | BVBS1282S001 | N | 14 Jul 2014 | 1.5 - 2.5 | SW8270C-SIM | PAH | Pyrene | 110 = | 5.4 | 11 | 5.6 | µg/kg | X | Y |
| SO | BVBS1282 | BVBS1282S001 | N | 14 Jul 2014 | 1.5 - 2.5 | SW8270C-SIM | PHTH | Bis(2-ethylhexyl)phthalate | 22 U | 11 | 22 | 61 | µg/kg | | N |
| SO | BVBS1282 | BVBS1282S001 | N | 14 Jul 2014 | 1.5 - 2.5 | SW8270C-SIM | PHTH | Butyl benzyl phthalate | 22 U | 11 | 22 | 100 | µg/kg | | N |
| SO | BVBS1282 | BVBS1282S001 | N | 14 Jul 2014 | 1.5 - 2.5 | SW8270C-SIM | PHTH | Diethyl phthalate | 22 U | 11 | 22 | 27 | µg/kg | | N |
| SO | BVBS1282 | BVBS1282S001 | N | 14 Jul 2014 | 1.5 - 2.5 | SW8270C-SIM | PHTH | Dimethyl phthalate | 22 U | 11 | 22 | 27 | µg/kg | | N |
| SO | BVBS1282 | BVBS1282S001 | N | 14 Jul 2014 | 1.5 - 2.5 | SW8270C-SIM | PHTH | Di-n-butyl phthalate | 22 U | 11 | 22 | 27 | µg/kg | | N |
| SO | BVBS1282 | BVBS1282S001 | N | 14 Jul 2014 | 1.5 - 2.5 | SW8270C-SIM | PHTH | Di-n-octyl phthalate | 22 U | 11 | 22 | 27 | µg/kg | | N |
| SO | BVBS1282 | BVBS1282S001 | N | 14 Jul 2014 | 1.5 - 2.5 | SW8260B | SVOC | Diisopropyl ether | 0.96 U | 0.96 | 9.6 | 10 | µg/kg | | N |
| SO | BVBS1282 | BVBS1282S001 | N | 14 Jul 2014 | 1.5 - 2.5 | SW8270C-SIM | SVOC | n-Nitrosodimethylamine | 22 U | 11 | 22 | 10 | µg/kg | X | RL |
| SO | BVBS1282 | BVBS1282S001 | N | 14 Jul 2014 | 1.5 - 2.5 | SW8260B | SVOC | tert-Amyl methyl ether | 0.96 U | 0.96 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1282 | BVBS1282S001 | N | 14 Jul 2014 | 1.5 - 2.5 | SW8260B | SVOC | tert-Butyl alcohol | 9.6 U | 9.6 | 48 | 50 | µg/kg | | N |
| SO | BVBS1282 | BVBS1282S001 | N | 14 Jul 2014 | 1.5 - 2.5 | SW8260B | SVOC | tert-Butyl ethyl ether | 0.96 U | 0.96 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1282 | BVBS1282S001 | N | 14 Jul 2014 | 1.5 - 2.5 | SW8260B | VOC | 1,1,1,2-Tetrachloroethane | 0.96 U | 0.96 | 4.8 | 5 | µg/kg | | N |

APPENDIX D-1

**Test Stand Biovent Analytical Data**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | FSP SL | Units | FSP Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1282 | BVBS1282S001 | N | 14 Jul 2014 | 1.5 - 2.5 | SW8260B | VOC | 1,1,1-Trichloroethane | 0.96 U | 0.96 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1282 | BVBS1282S001 | N | 14 Jul 2014 | 1.5 - 2.5 | SW8260B | VOC | 1,1,2,2-Tetrachloroethane | 0.96 U | 0.96 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1282 | BVBS1282S001 | N | 14 Jul 2014 | 1.5 - 2.5 | SW8260B | VOC | 1,1,2-Trichloro-1,2,2-trifluoroethane | 1.9 U | 1.9 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1282 | BVBS1282S001 | N | 14 Jul 2014 | 1.5 - 2.5 | SW8260B | VOC | 1,1,2-Trichloroethane | 0.96 U | 0.96 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1282 | BVBS1282S001 | N | 14 Jul 2014 | 1.5 - 2.5 | SW8260B | VOC | 1,1-Dichloroethane | 0.96 U | 0.96 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1282 | BVBS1282S001 | N | 14 Jul 2014 | 1.5 - 2.5 | SW8260B | VOC | 1,1-Dichloroethene | 0.96 U | 0.96 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1282 | BVBS1282S001 | N | 14 Jul 2014 | 1.5 - 2.5 | SW8260B | VOC | 1,1-Dichloropropene | 0.96 U | 0.96 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1282 | BVBS1282S001 | N | 14 Jul 2014 | 1.5 - 2.5 | SW8260B | VOC | 1,2,3-Trichlorobenzene | 1.9 U | 1.9 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1282 | BVBS1282S001 | N | 14 Jul 2014 | 1.5 - 2.5 | SW8260B | VOC | 1,2,3-Trichloropropane | 1.9 U | 1.9 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1282 | BVBS1282S001 | N | 14 Jul 2014 | 1.5 - 2.5 | SW8260B | VOC | 1,2,4-Trichlorobenzene | 1.9 U | 1.9 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1282 | BVBS1282S001 | N | 14 Jul 2014 | 1.5 - 2.5 | SW8260B | VOC | 1,2,4-Trimethylbenzene | 0.96 U | 0.96 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1282 | BVBS1282S001 | N | 14 Jul 2014 | 1.5 - 2.5 | SW8260B | VOC | 1,2-Dibromo-3-chloropropane | 1.9 U | 1.9 | 9.6 | 10 | µg/kg | | N |
| SO | BVBS1282 | BVBS1282S001 | N | 14 Jul 2014 | 1.5 - 2.5 | SW8260B | VOC | 1,2-Dibromoethane (EDB) | 0.96 U | 0.96 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1282 | BVBS1282S001 | N | 14 Jul 2014 | 1.5 - 2.5 | SW8260B | VOC | 1,2-Dichlorobenzene | 0.96 U | 0.96 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1282 | BVBS1282S001 | N | 14 Jul 2014 | 1.5 - 2.5 | SW8260B | VOC | 1,2-Dichloroethane | 0.96 U | 0.96 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1282 | BVBS1282S001 | N | 14 Jul 2014 | 1.5 - 2.5 | SW8260B | VOC | 1,2-Dichloropropane | 0.96 U | 0.96 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1282 | BVBS1282S001 | N | 14 Jul 2014 | 1.5 - 2.5 | SW8260B | VOC | 1,3,5-Trimethylbenzene | 0.96 U | 0.96 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1282 | BVBS1282S001 | N | 14 Jul 2014 | 1.5 - 2.5 | SW8260B | VOC | 1,3-Dichlorobenzene | 0.96 U | 0.96 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1282 | BVBS1282S001 | N | 14 Jul 2014 | 1.5 - 2.5 | SW8260B | VOC | 1,3-Dichloropropane | 0.96 U | 0.96 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1282 | BVBS1282S001 | N | 14 Jul 2014 | 1.5 - 2.5 | SW8260B | VOC | 1,4-Dichlorobenzene | 0.96 U | 0.96 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1282 | BVBS1282S001 | N | 14 Jul 2014 | 1.5 - 2.5 | SW8260B | VOC | 2,2-Dichloropropane | 1.9 U | 1.9 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1282 | BVBS1282S001 | N | 14 Jul 2014 | 1.5 - 2.5 | SW8260B | VOC | 2-Butanone (MEK) | 4.8 U | 4.8 | 19 | 20 | µg/kg | | N |
| SO | BVBS1282 | BVBS1282S001 | N | 14 Jul 2014 | 1.5 - 2.5 | SW8260B | VOC | 2-Chloro-1,1,1-trifluoroethane | 1.9 U | 1.9 | 9.6 | 10 | µg/kg | | N |
| SO | BVBS1282 | BVBS1282S001 | N | 14 Jul 2014 | 1.5 - 2.5 | SW8260B | VOC | 2-Chloroethyl vinyl ether | 1.9 U | 1.9 | 9.6 | 10 | µg/kg | | N |
| SO | BVBS1282 | BVBS1282S001 | N | 14 Jul 2014 | 1.5 - 2.5 | SW8260B | VOC | 2-Chlorotoluene | 0.96 U | 0.96 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1282 | BVBS1282S001 | N | 14 Jul 2014 | 1.5 - 2.5 | SW8260B | VOC | 2-Hexanone | 4.8 U | 4.8 | 9.6 | 10 | µg/kg | | N |
| SO | BVBS1282 | BVBS1282S001 | N | 14 Jul 2014 | 1.5 - 2.5 | SW8260B | VOC | 4-Chlorotoluene | 0.96 U | 0.96 | 9.6 | 10 | µg/kg | | N |
| SO | BVBS1282 | BVBS1282S001 | N | 14 Jul 2014 | 1.5 - 2.5 | SW8260B | VOC | 4-Methyl-2-pentanone (MIBK) | 4.8 U | 4.8 | 9.6 | 10 | µg/kg | | N |
| SO | BVBS1282 | BVBS1282S001 | N | 14 Jul 2014 | 1.5 - 2.5 | SW8260B | VOC | Acetone | 4.8 U | 4.8 | 19 | 20 | µg/kg | | N |
| SO | BVBS1282 | BVBS1282S001 | N | 14 Jul 2014 | 1.5 - 2.5 | SW8260B | VOC | Benzene | 0.96 U | 0.96 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1282 | BVBS1282S001 | N | 14 Jul 2014 | 1.5 - 2.5 | SW8260B | VOC | Bromobenzene | 0.96 U | 0.96 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1282 | BVBS1282S001 | N | 14 Jul 2014 | 1.5 - 2.5 | SW8260B | VOC | Bromochloromethane | 0.96 U | 0.96 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1282 | BVBS1282S001 | N | 14 Jul 2014 | 1.5 - 2.5 | SW8260B | VOC | Bromodichloromethane | 0.96 U | 0.96 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1282 | BVBS1282S001 | N | 14 Jul 2014 | 1.5 - 2.5 | SW8260B | VOC | Bromoform | 1.9 U | 1.9 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1282 | BVBS1282S001 | N | 14 Jul 2014 | 1.5 - 2.5 | SW8260B | VOC | Bromomethane | 1.9 U | 1.9 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1282 | BVBS1282S001 | N | 14 Jul 2014 | 1.5 - 2.5 | SW8260B | VOC | Carbon tetrachloride | 0.96 U | 0.96 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1282 | BVBS1282S001 | N | 14 Jul 2014 | 1.5 - 2.5 | SW8260B | VOC | Chlorobenzene | 0.96 U | 0.96 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1282 | BVBS1282S001 | N | 14 Jul 2014 | 1.5 - 2.5 | SW8260B | VOC | Chloroethane | 1.9 U | 1.9 | 4.8 | 5 | µg/kg | | N |

APPENDIX D-1

**Test Stand Biovent Analytical Data**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | FSP SL | Units | FSP Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1282 | BVBS1282S001 | N | 14 Jul 2014 | 1.5 - 2.5 | SW8260B | VOC | Chloromethane | 1.9 U | 1.9 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1282 | BVBS1282S001 | N | 14 Jul 2014 | 1.5 - 2.5 | SW8260B | VOC | Chlorotrifluoroethylene | 1.9 U | 1.9 | 9.6 | 10 | µg/kg | | N |
| SO | BVBS1282 | BVBS1282S001 | N | 14 Jul 2014 | 1.5 - 2.5 | SW8260B | VOC | cis-1,2-Dichloroethene | 0.96 U | 0.96 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1282 | BVBS1282S001 | N | 14 Jul 2014 | 1.5 - 2.5 | SW8260B | VOC | cis-1,3-Dichloropropene | 0.96 U | 0.96 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1282 | BVBS1282S001 | N | 14 Jul 2014 | 1.5 - 2.5 | SW8260B | VOC | Dibromochloromethane | 0.96 U | 0.96 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1282 | BVBS1282S001 | N | 14 Jul 2014 | 1.5 - 2.5 | SW8260B | VOC | Dibromomethane | 0.96 U | 0.96 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1282 | BVBS1282S001 | N | 14 Jul 2014 | 1.5 - 2.5 | SW8260B | VOC | Dichlorodifluoromethane | 1.9 U | 1.9 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1282 | BVBS1282S001 | N | 14 Jul 2014 | 1.5 - 2.5 | SW8260B | VOC | Ethylbenzene | 0.96 U | 0.96 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1282 | BVBS1282S001 | N | 14 Jul 2014 | 1.5 - 2.5 | SW8260B | VOC | Hexachlorobutadiene | 1.9 U | 1.9 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1282 | BVBS1282S001 | N | 14 Jul 2014 | 1.5 - 2.5 | SW8260B | VOC | Isopropylbenzene | 0.96 U | 0.96 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1282 | BVBS1282S001 | N | 14 Jul 2014 | 1.5 - 2.5 | SW8260B | VOC | m,p-Xylenes | 1.9 U | 1.9 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1282 | BVBS1282S001 | N | 14 Jul 2014 | 1.5 - 2.5 | SW8260B | VOC | Methylene chloride | 1.9 U | 1.9 | 9.6 | 10 | µg/kg | | N |
| SO | BVBS1282 | BVBS1282S001 | N | 14 Jul 2014 | 1.5 - 2.5 | SW8260B | VOC | Methyl-tert-butyl Ether (MTBE) | 0.96 U | 0.96 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1282 | BVBS1282S001 | N | 14 Jul 2014 | 1.5 - 2.5 | SW8260B | VOC | n-butylbenzene | 0.96 U | 0.96 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1282 | BVBS1282S001 | N | 14 Jul 2014 | 1.5 - 2.5 | SW8260B | VOC | n-Propylbenzene | 0.96 U | 0.96 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1282 | BVBS1282S001 | N | 14 Jul 2014 | 1.5 - 2.5 | SW8260B | VOC | o-Xylene | 0.96 U | 0.96 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1282 | BVBS1282S001 | N | 14 Jul 2014 | 1.5 - 2.5 | SW8260B | VOC | p-Isopropyltoluene | 0.96 U | 0.96 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1282 | BVBS1282S001 | N | 14 Jul 2014 | 1.5 - 2.5 | SW8260B | VOC | sec-Butylbenzene | 0.96 U | 0.96 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1282 | BVBS1282S001 | N | 14 Jul 2014 | 1.5 - 2.5 | SW8260B | VOC | Styrene | 0.96 U | 0.96 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1282 | BVBS1282S001 | N | 14 Jul 2014 | 1.5 - 2.5 | SW8260B | VOC | tert-Butylbenzene | 0.96 U | 0.96 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1282 | BVBS1282S001 | N | 14 Jul 2014 | 1.5 - 2.5 | SW8260B | VOC | Tetrachloroethene | 0.96 U | 0.96 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1282 | BVBS1282S001 | N | 14 Jul 2014 | 1.5 - 2.5 | SW8260B | VOC | Toluene | 0.96 U | 0.96 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1282 | BVBS1282S001 | N | 14 Jul 2014 | 1.5 - 2.5 | SW8260B | VOC | trans-1,2-Dichloroethene | 0.96 U | 0.96 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1282 | BVBS1282S001 | N | 14 Jul 2014 | 1.5 - 2.5 | SW8260B | VOC | trans-1,3-Dichloropropene | 0.96 U | 0.96 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1282 | BVBS1282S001 | N | 14 Jul 2014 | 1.5 - 2.5 | SW8260B | VOC | Trichloroethene | 6.4 = | 0.96 | 4.8 | 5 | µg/kg | X | Y |
| SO | BVBS1282 | BVBS1282S001 | N | 14 Jul 2014 | 1.5 - 2.5 | SW8260B | VOC | Trichlorofluoromethane | 1.9 U | 1.9 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1282 | BVBS1282S001 | N | 14 Jul 2014 | 1.5 - 2.5 | SW8260B | VOC | Trichloromethane (Chloroform) | 0.96 U | 0.96 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1282 | BVBS1282S001 | N | 14 Jul 2014 | 1.5 - 2.5 | SW8260B | VOC | Vinyl chloride | 1.9 U | 1.9 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1283 | BVBS1283S001 | N | 14 Jul 2014 | 2 - 3 | SW9045D | GENCHEM | pH | 8.75 = | | | | PH UNITS | | NC |
| SO | BVBS1283 | BVBS1283S001 | N | 14 Jul 2014 | 2 - 3 | Walkley-Black | GENCHEM | Total Organic Carbon | 615 U | 615 | 615 | | mg/kg | | NC |
| SO | BVBS1283 | BVBS1283S001 | N | 14 Jul 2014 | 2 - 3 | M8015D | HC | Diesel Range Organics (C12-C14) | 5300 U | 2700 | 5300 | 5000 | µg/kg | X | N |
| SO | BVBS1283 | BVBS1283S001 | N | 14 Jul 2014 | 2 - 3 | M8015D | HC | Diesel Range Organics (C15-C20) | 5300 U | 2700 | 5300 | 5000 | µg/kg | X | N |
| SO | BVBS1283 | BVBS1283S001 | N | 14 Jul 2014 | 2 - 3 | M8015D | HC | Diesel Range Organics (C21-C30) | 5300 U | 2700 | 5300 | 5000 | µg/kg | X | N |
| SO | BVBS1283 | BVBS1283S001 | N | 14 Jul 2014 | 2 - 3 | M8015D | HC | Diesel Range Organics (C8-C11) | 5300 U | 2700 | 5300 | 1000 | µg/kg | X | RL |
| SO | BVBS1283 | BVBS1283S001 | N | 14 Jul 2014 | 2 - 3 | SW8015B | HC | GRO (C6-C12) | 1000 U | 510 | 1000 | 1000 | µg/kg | | N |
| SO | BVBS1283 | BVBS1283S001 | N | 14 Jul 2014 | 2 - 3 | M8015D | HC | ORO (C31-C40) | 11000 U | 5300 | 11000 | 10000 | µg/kg | X | N |
| SO | BVBS1283 | BVBS1283S001 | N | 14 Jul 2014 | 2 - 3 | M8015D | HC | TOTAL EFH(C8-C40) | 5300 U | 2700 | 5300 | 10000 | µg/kg | | N |
| SO | BVBS1283 | BVBS1283S001 | N | 14 Jul 2014 | 2 - 3 | SW8270C-SIM | PAH | 1-Methylnaphthalene | 11 U | 5.3 | 11 | 2.5 | µg/kg | X | RL |

APPENDIX D-1

**Test Stand Biovent Analytical Data**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | FSP SL | Units | FSP Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1283 | BVBS1283S001 | N | 14 Jul 2014 | 2 - 3 | SW8270C-SIM | PAH | 2-Methylnaphthalene | 11 U | 5.3 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1283 | BVBS1283S001 | N | 14 Jul 2014 | 2 - 3 | SW8270C-SIM | PAH | Acenaphthene | 11 U | 5.3 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1283 | BVBS1283S001 | N | 14 Jul 2014 | 2 - 3 | SW8270C-SIM | PAH | Acenaphthylene | 11 U | 5.3 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1283 | BVBS1283S001 | N | 14 Jul 2014 | 2 - 3 | SW8270C-SIM | PAH | Anthracene | 11 U | 5.3 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1283 | BVBS1283S001 | N | 14 Jul 2014 | 2 - 3 | SW8270C-SIM | PAH | Benzo(a)anthracene | 11 U | 5.3 | 11 |  | µg/kg |  | NC |
| SO | BVBS1283 | BVBS1283S001 | N | 14 Jul 2014 | 2 - 3 | SW8270C-SIM | PAH | Benzo(a)pyrene | 11 U | 5.3 | 11 |  | µg/kg |  | NC |
| SO | BVBS1283 | BVBS1283S001 | N | 14 Jul 2014 | 2 - 3 | SW8270C-SIM | PAH | Benzo(b)fluoranthene | 11 U | 5.3 | 11 |  | µg/kg |  | NC |
| SO | BVBS1283 | BVBS1283S001 | N | 14 Jul 2014 | 2 - 3 | SW8270C-SIM | PAH | Benzo(ghi)perylene | 11 U | 5.3 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1283 | BVBS1283S001 | N | 14 Jul 2014 | 2 - 3 | SW8270C-SIM | PAH | Benzo(k)fluoranthene | 11 U | 5.3 | 11 |  | µg/kg |  | NC |
| SO | BVBS1283 | BVBS1283S001 | N | 14 Jul 2014 | 2 - 3 | SW8270C-SIM | PAH | Chrysene | 11 U | 5.3 | 11 |  | µg/kg |  | NC |
| SO | BVBS1283 | BVBS1283S001 | N | 14 Jul 2014 | 2 - 3 | SW8270C-SIM | PAH | Dibenzo(a,h)anthracene | 11 U | 5.3 | 11 |  | µg/kg |  | NC |
| SO | BVBS1283 | BVBS1283S001 | N | 14 Jul 2014 | 2 - 3 | SW8270C-SIM | PAH | Fluoranthene | 11 U | 5.3 | 11 | 5.2 | µg/kg | X | RL |
| SO | BVBS1283 | BVBS1283S001 | N | 14 Jul 2014 | 2 - 3 | SW8270C-SIM | PAH | Fluorene | 11 U | 5.3 | 11 | 3.8 | µg/kg | X | RL |
| SO | BVBS1283 | BVBS1283S001 | N | 14 Jul 2014 | 2 - 3 | SW8270C-SIM | PAH | Indeno(1,2,3-cd)pyrene | 11 U | 5.3 | 11 |  | µg/kg |  | NC |
| SO | BVBS1283 | BVBS1283S001 | N | 14 Jul 2014 | 2 - 3 | SW8270C-SIM | PAH | Naphthalene | 11 U | 5.3 | 11 | 3.6 | µg/kg | X | RL |
| SO | BVBS1283 | BVBS1283S001 | N | 14 Jul 2014 | 2 - 3 | SW8270C-SIM | PAH | PAHTEQM | 0 U |  |  | 4.47 | µg/kg |  | N |
| SO | BVBS1283 | BVBS1283S001 | N | 14 Jul 2014 | 2 - 3 | SW8270C-SIM | PAH | Phenanthrene | 11 U | 5.3 | 11 | 3.9 | µg/kg | X | RL |
| SO | BVBS1283 | BVBS1283S001 | N | 14 Jul 2014 | 2 - 3 | SW8270C-SIM | PAH | Pyrene | 11 U | 5.3 | 11 | 5.6 | µg/kg | X | N |
| SO | BVBS1283 | BVBS1283S001 | N | 14 Jul 2014 | 2 - 3 | SW8270C-SIM | PHTH | Bis(2-ethylhexyl)phthalate | 21 U | 11 | 21 | 61 | µg/kg |  | N |
| SO | BVBS1283 | BVBS1283S001 | N | 14 Jul 2014 | 2 - 3 | SW8270C-SIM | PHTH | Butyl benzyl phthalate | 21 U | 11 | 21 | 100 | µg/kg |  | N |
| SO | BVBS1283 | BVBS1283S001 | N | 14 Jul 2014 | 2 - 3 | SW8270C-SIM | PHTH | Diethyl phthalate | 21 U | 11 | 21 | 27 | µg/kg |  | N |
| SO | BVBS1283 | BVBS1283S001 | N | 14 Jul 2014 | 2 - 3 | SW8270C-SIM | PHTH | Dimethyl phthalate | 21 U | 11 | 21 | 27 | µg/kg |  | N |
| SO | BVBS1283 | BVBS1283S001 | N | 14 Jul 2014 | 2 - 3 | SW8270C-SIM | PHTH | Di-n-butyl phthalate | 21 U | 11 | 21 | 27 | µg/kg |  | N |
| SO | BVBS1283 | BVBS1283S001 | N | 14 Jul 2014 | 2 - 3 | SW8270C-SIM | PHTH | Di-n-octyl phthalate | 21 U | 11 | 21 | 27 | µg/kg |  | N |
| SO | BVBS1283 | BVBS1283S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | SVOC | Diisopropyl ether | 0.99 U | 0.99 | 9.9 | 10 | µg/kg |  | N |
| SO | BVBS1283 | BVBS1283S001 | N | 14 Jul 2014 | 2 - 3 | SW8270C-SIM | SVOC | n-Nitrosodimethylamine | 21 U | 11 | 21 | 10 | µg/kg | X | RL |
| SO | BVBS1283 | BVBS1283S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | SVOC | tert-Amyl methyl ether | 0.99 U | 0.99 | 4.9 | 5 | µg/kg |  | N |
| SO | BVBS1283 | BVBS1283S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | SVOC | tert-Butyl alcohol | 9.9 U | 9.9 | 49 | 50 | µg/kg |  | N |
| SO | BVBS1283 | BVBS1283S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | SVOC | tert-Butyl ethyl ether | 0.99 U | 0.99 | 4.9 | 5 | µg/kg |  | N |
| SO | BVBS1283 | BVBS1283S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | 1,1,1,2-Tetrachloroethane | 0.99 U | 0.99 | 4.9 | 5 | µg/kg |  | N |
| SO | BVBS1283 | BVBS1283S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | 1,1,1-Trichloroethane | 0.99 U | 0.99 | 4.9 | 5 | µg/kg |  | N |
| SO | BVBS1283 | BVBS1283S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | 1,1,2,2-Tetrachloroethane | 0.99 U | 0.99 | 4.9 | 5 | µg/kg |  | N |
| SO | BVBS1283 | BVBS1283S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | 1,1,2-Trichloro-1,2,2-trifluoroethane | 2 U | 2 | 4.9 | 5 | µg/kg |  | N |
| SO | BVBS1283 | BVBS1283S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | 1,1,2-Trichloroethane | 0.99 U | 0.99 | 4.9 | 5 | µg/kg |  | N |
| SO | BVBS1283 | BVBS1283S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | 1,1-Dichloroethane | 0.99 U | 0.99 | 4.9 | 5 | µg/kg |  | N |
| SO | BVBS1283 | BVBS1283S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | 1,1-Dichloroethene | 0.99 U | 0.99 | 4.9 | 5 | µg/kg |  | N |
| SO | BVBS1283 | BVBS1283S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | 1,1-Dichloropropene | 0.99 U | 0.99 | 4.9 | 5 | µg/kg |  | N |
| SO | BVBS1283 | BVBS1283S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | 1,2,3-Trichlorobenzene | 2 U | 2 | 4.9 | 5 | µg/kg |  | N |

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**Test Stand Biovent Analytical Data**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | FSP SL | Units | FSP Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1283 | BVBS1283S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | 1,2,3-Trichloropropane | 2 U | 2 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1283 | BVBS1283S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | 1,2,4-Trichlorobenzene | 2 U | 2 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1283 | BVBS1283S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | 1,2,4-Trimethylbenzene | 0.99 U | 0.99 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1283 | BVBS1283S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | 1,2-Dibromo-3-chloropropane | 2 U | 2 | 9.9 | 10 | µg/kg | | N |
| SO | BVBS1283 | BVBS1283S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | 1,2-Dibromoethane (EDB) | 0.99 U | 0.99 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1283 | BVBS1283S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | 1,2-Dichlorobenzene | 0.99 U | 0.99 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1283 | BVBS1283S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | 1,2-Dichloroethane | 0.99 U | 0.99 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1283 | BVBS1283S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | 1,2-Dichloropropane | 0.99 U | 0.99 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1283 | BVBS1283S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | 1,3,5-Trimethylbenzene | 0.99 U | 0.99 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1283 | BVBS1283S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | 1,3-Dichlorobenzene | 0.99 U | 0.99 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1283 | BVBS1283S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | 1,3-Dichloropropane | 0.99 U | 0.99 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1283 | BVBS1283S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | 1,4-Dichlorobenzene | 0.99 U | 0.99 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1283 | BVBS1283S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | 2,2-Dichloropropane | 2 U | 2 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1283 | BVBS1283S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | 2-Butanone (MEK) | 4.9 U | 4.9 | 20 | 20 | µg/kg | | N |
| SO | BVBS1283 | BVBS1283S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | 2-Chloro-1,1,1-trifluoroethane | 2 U | 2 | 9.9 | 10 | µg/kg | | N |
| SO | BVBS1283 | BVBS1283S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | 2-Chloroethyl vinyl ether | 2 U | 2 | 9.9 | 10 | µg/kg | | N |
| SO | BVBS1283 | BVBS1283S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | 2-Chlorotoluene | 0.99 U | 0.99 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1283 | BVBS1283S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | 2-Hexanone | 4.9 U | 4.9 | 9.9 | 10 | µg/kg | | N |
| SO | BVBS1283 | BVBS1283S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | 4-Chlorotoluene | 0.99 U | 0.99 | 9.9 | 10 | µg/kg | | N |
| SO | BVBS1283 | BVBS1283S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | 4-Methyl-2-pentanone (MIBK) | 4.9 U | 4.9 | 9.9 | 10 | µg/kg | | N |
| SO | BVBS1283 | BVBS1283S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | Acetone | 4.9 U | 4.9 | 20 | 20 | µg/kg | | N |
| SO | BVBS1283 | BVBS1283S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | Benzene | 0.99 U | 0.99 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1283 | BVBS1283S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | Bromobenzene | 0.99 U | 0.99 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1283 | BVBS1283S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | Bromochloromethane | 0.99 U | 0.99 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1283 | BVBS1283S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | Bromodichloromethane | 0.99 U | 0.99 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1283 | BVBS1283S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | Bromoform | 2 U | 2 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1283 | BVBS1283S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | Bromomethane | 2 U | 2 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1283 | BVBS1283S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | Carbon tetrachloride | 0.99 U | 0.99 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1283 | BVBS1283S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | Chlorobenzene | 0.99 U | 0.99 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1283 | BVBS1283S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | Chloroethane | 2 U | 2 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1283 | BVBS1283S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | Chloromethane | 2 U | 2 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1283 | BVBS1283S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | Chlorotrifluoroethylene | 2 U | 2 | 9.9 | 10 | µg/kg | | N |
| SO | BVBS1283 | BVBS1283S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | cis-1,2-Dichloroethene | 0.99 U | 0.99 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1283 | BVBS1283S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | cis-1,3-Dichloropropene | 0.99 U | 0.99 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1283 | BVBS1283S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | Dibromochloromethane | 0.99 U | 0.99 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1283 | BVBS1283S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | Dibromomethane | 0.99 U | 0.99 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1283 | BVBS1283S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | Dichlorodifluoromethane | 2 U | 2 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1283 | BVBS1283S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | Ethylbenzene | 0.99 U | 0.99 | 4.9 | 5 | µg/kg | | N |

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**Test Stand Biovent Analytical Data**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | FSP SL | Units | FSP Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1283 | BVBS1283S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | Hexachlorobutadiene | 2 U | 2 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1283 | BVBS1283S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | Isopropylbenzene | 0.99 U | 0.99 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1283 | BVBS1283S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | m,p-Xylenes | 2 U | 2 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1283 | BVBS1283S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | Methylene chloride | 2 U | 2 | 9.9 | 10 | µg/kg | | N |
| SO | BVBS1283 | BVBS1283S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | Methyl-tert-butyl Ether (MTBE) | 0.99 U | 0.99 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1283 | BVBS1283S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | n-butylbenzene | 0.99 U | 0.99 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1283 | BVBS1283S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | n-Propylbenzene | 0.99 U | 0.99 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1283 | BVBS1283S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | o-Xylene | 0.99 U | 0.99 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1283 | BVBS1283S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | p-Isopropyltoluene | 0.99 U | 0.99 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1283 | BVBS1283S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | sec-Butylbenzene | 0.99 U | 0.99 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1283 | BVBS1283S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | Styrene | 0.99 U | 0.99 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1283 | BVBS1283S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | tert-Butylbenzene | 0.99 U | 0.99 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1283 | BVBS1283S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | Tetrachloroethene | 0.99 U | 0.99 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1283 | BVBS1283S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | Toluene | 0.99 U | 0.99 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1283 | BVBS1283S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | trans-1,2-Dichloroethene | 0.99 U | 0.99 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1283 | BVBS1283S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | trans-1,3-Dichloropropene | 0.99 U | 0.99 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1283 | BVBS1283S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | Trichloroethene | 0.99 U | 0.99 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1283 | BVBS1283S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | Trichlorofluoromethane | 2 U | 2 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1283 | BVBS1283S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | Trichloromethane (Chloroform) | 0.99 U | 0.99 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1283 | BVBS1283S001 | N | 14 Jul 2014 | 2 - 3 | SW8260B | VOC | Vinyl chloride | 2 U | 2 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1283 | BVBS1283S002 | N | 14 Jul 2014 | 4.5 - 5.5 | SW9045D | GENCHEM | pH | 8.74 = | | | | PH UNITS | | NC |
| SO | BVBS1283 | BVBS1283S002 | N | 14 Jul 2014 | 4.5 - 5.5 | Walkley-Black | GENCHEM | Total Organic Carbon | 645 U | 645 | 645 | | mg/kg | | NC |
| SO | BVBS1283 | BVBS1283S002 | N | 14 Jul 2014 | 4.5 - 5.5 | M8015D | HC | Diesel Range Organics (C12-C14) | 5500 U | 2700 | 5500 | 5000 | µg/kg | X | N |
| SO | BVBS1283 | BVBS1283S002 | N | 14 Jul 2014 | 4.5 - 5.5 | M8015D | HC | Diesel Range Organics (C15-C20) | 5500 U | 2700 | 5500 | 5000 | µg/kg | X | N |
| SO | BVBS1283 | BVBS1283S002 | N | 14 Jul 2014 | 4.5 - 5.5 | M8015D | HC | Diesel Range Organics (C21-C30) | 5500 U | 2700 | 5500 | 5000 | µg/kg | X | N |
| SO | BVBS1283 | BVBS1283S002 | N | 14 Jul 2014 | 4.5 - 5.5 | M8015D | HC | Diesel Range Organics (C8-C11) | 5500 U | 2700 | 5500 | 1000 | µg/kg | X | RL |
| SO | BVBS1283 | BVBS1283S002 | N | 14 Jul 2014 | 4.5 - 5.5 | SW8015B | HC | GRO (C6-C12) | 1000 U | 520 | 1000 | 1000 | µg/kg | | N |
| SO | BVBS1283 | BVBS1283S002 | N | 14 Jul 2014 | 4.5 - 5.5 | M8015D | HC | ORO (C31-C40) | 11000 U | 5500 | 11000 | 10000 | µg/kg | X | N |
| SO | BVBS1283 | BVBS1283S002 | N | 14 Jul 2014 | 4.5 - 5.5 | M8015D | HC | TOTAL EFH(C8-C40) | 5500 U | 2700 | 5500 | 10000 | µg/kg | | N |
| SO | BVBS1283 | BVBS1283S002 | N | 14 Jul 2014 | 4.5 - 5.5 | SW8270C-SIM | PAH | 1-Methylnaphthalene | 11 U | 5.5 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1283 | BVBS1283S002 | N | 14 Jul 2014 | 4.5 - 5.5 | SW8270C-SIM | PAH | 2-Methylnaphthalene | 11 U | 5.5 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1283 | BVBS1283S002 | N | 14 Jul 2014 | 4.5 - 5.5 | SW8270C-SIM | PAH | Acenaphthene | 11 U | 5.5 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1283 | BVBS1283S002 | N | 14 Jul 2014 | 4.5 - 5.5 | SW8270C-SIM | PAH | Acenaphthylene | 11 U | 5.5 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1283 | BVBS1283S002 | N | 14 Jul 2014 | 4.5 - 5.5 | SW8270C-SIM | PAH | Anthracene | 11 U | 5.5 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1283 | BVBS1283S002 | N | 14 Jul 2014 | 4.5 - 5.5 | SW8270C-SIM | PAH | Benzo(a)anthracene | 11 U | 5.5 | 11 | | µg/kg | | NC |
| SO | BVBS1283 | BVBS1283S002 | N | 14 Jul 2014 | 4.5 - 5.5 | SW8270C-SIM | PAH | Benzo(a)pyrene | 11 U | 5.5 | 11 | | µg/kg | | NC |
| SO | BVBS1283 | BVBS1283S002 | N | 14 Jul 2014 | 4.5 - 5.5 | SW8270C-SIM | PAH | Benzo(b)fluoranthene | 11 U | 5.5 | 11 | | µg/kg | | NC |
| SO | BVBS1283 | BVBS1283S002 | N | 14 Jul 2014 | 4.5 - 5.5 | SW8270C-SIM | PAH | Benzo(ghi)perylene | 11 U | 5.5 | 11 | 2.5 | µg/kg | X | RL |

APPENDIX D-1

**Test Stand Biovent Analytical Data**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | FSP SL | Units | FSP Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1283 | BVBS1283S002 | N | 14 Jul 2014 | 4.5 - 5.5 | SW8270C-SIM | PAH | Benzo(k)fluoranthene | 11 U | 5.5 | 11 | | µg/kg | | NC |
| SO | BVBS1283 | BVBS1283S002 | N | 14 Jul 2014 | 4.5 - 5.5 | SW8270C-SIM | PAH | Chrysene | 11 U | 5.5 | 11 | | µg/kg | | NC |
| SO | BVBS1283 | BVBS1283S002 | N | 14 Jul 2014 | 4.5 - 5.5 | SW8270C-SIM | PAH | Dibenzo(a,h)anthracene | 11 U | 5.5 | 11 | | µg/kg | | NC |
| SO | BVBS1283 | BVBS1283S002 | N | 14 Jul 2014 | 4.5 - 5.5 | SW8270C-SIM | PAH | Fluoranthene | 11 U | 5.5 | 11 | 5.2 | µg/kg | X | RL |
| SO | BVBS1283 | BVBS1283S002 | N | 14 Jul 2014 | 4.5 - 5.5 | SW8270C-SIM | PAH | Fluorene | 11 U | 5.5 | 11 | 3.8 | µg/kg | X | RL |
| SO | BVBS1283 | BVBS1283S002 | N | 14 Jul 2014 | 4.5 - 5.5 | SW8270C-SIM | PAH | Indeno(1,2,3-cd)pyrene | 11 U | 5.5 | 11 | | µg/kg | | NC |
| SO | BVBS1283 | BVBS1283S002 | N | 14 Jul 2014 | 4.5 - 5.5 | SW8270C-SIM | PAH | Naphthalene | 11 U | 5.5 | 11 | 3.6 | µg/kg | X | RL |
| SO | BVBS1283 | BVBS1283S002 | N | 14 Jul 2014 | 4.5 - 5.5 | SW8270C-SIM | PAH | PAHTEQM | 0 U | | | 4.47 | µg/kg | | N |
| SO | BVBS1283 | BVBS1283S002 | N | 14 Jul 2014 | 4.5 - 5.5 | SW8270C-SIM | PAH | Phenanthrene | 11 U | 5.5 | 11 | 3.9 | µg/kg | X | RL |
| SO | BVBS1283 | BVBS1283S002 | N | 14 Jul 2014 | 4.5 - 5.5 | SW8270C-SIM | PAH | Pyrene | 11 U | 5.5 | 11 | 5.6 | µg/kg | X | N |
| SO | BVBS1283 | BVBS1283S002 | N | 14 Jul 2014 | 4.5 - 5.5 | SW8270C-SIM | PHTH | Bis(2-ethylhexyl)phthalate | 22 U | 11 | 22 | 61 | µg/kg | | N |
| SO | BVBS1283 | BVBS1283S002 | N | 14 Jul 2014 | 4.5 - 5.5 | SW8270C-SIM | PHTH | Butyl benzyl phthalate | 22 U | 11 | 22 | 100 | µg/kg | | N |
| SO | BVBS1283 | BVBS1283S002 | N | 14 Jul 2014 | 4.5 - 5.5 | SW8270C-SIM | PHTH | Diethyl phthalate | 22 U | 11 | 22 | 27 | µg/kg | | N |
| SO | BVBS1283 | BVBS1283S002 | N | 14 Jul 2014 | 4.5 - 5.5 | SW8270C-SIM | PHTH | Dimethyl phthalate | 22 U | 11 | 22 | 27 | µg/kg | | N |
| SO | BVBS1283 | BVBS1283S002 | N | 14 Jul 2014 | 4.5 - 5.5 | SW8270C-SIM | PHTH | Di-n-butyl phthalate | 22 U | 11 | 22 | 27 | µg/kg | | N |
| SO | BVBS1283 | BVBS1283S002 | N | 14 Jul 2014 | 4.5 - 5.5 | SW8270C-SIM | PHTH | Di-n-octyl phthalate | 22 U | 11 | 22 | 27 | µg/kg | | N |
| SO | BVBS1283 | BVBS1283S002 | N | 14 Jul 2014 | 4.5 - 5.5 | SW8260B | SVOC | Diisopropyl ether | 0.98 U | 0.98 | 9.8 | 10 | µg/kg | | N |
| SO | BVBS1283 | BVBS1283S002 | N | 14 Jul 2014 | 4.5 - 5.5 | SW8270C-SIM | SVOC | n-Nitrosodimethylamine | 22 U | 11 | 22 | 10 | µg/kg | X | RL |
| SO | BVBS1283 | BVBS1283S002 | N | 14 Jul 2014 | 4.5 - 5.5 | SW8260B | SVOC | tert-Amyl methyl ether | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1283 | BVBS1283S002 | N | 14 Jul 2014 | 4.5 - 5.5 | SW8260B | SVOC | tert-Butyl alcohol | 9.8 U | 9.8 | 49 | 50 | µg/kg | | N |
| SO | BVBS1283 | BVBS1283S002 | N | 14 Jul 2014 | 4.5 - 5.5 | SW8260B | SVOC | tert-Butyl ethyl ether | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1283 | BVBS1283S002 | N | 14 Jul 2014 | 4.5 - 5.5 | SW8260B | VOC | 1,1,1,2-Tetrachloroethane | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1283 | BVBS1283S002 | N | 14 Jul 2014 | 4.5 - 5.5 | SW8260B | VOC | 1,1,1-Trichloroethane | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1283 | BVBS1283S002 | N | 14 Jul 2014 | 4.5 - 5.5 | SW8260B | VOC | 1,1,2,2-Tetrachloroethane | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1283 | BVBS1283S002 | N | 14 Jul 2014 | 4.5 - 5.5 | SW8260B | VOC | 1,1,2-Trichloro-1,2,2-trifluoroethane | 2 U | 2 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1283 | BVBS1283S002 | N | 14 Jul 2014 | 4.5 - 5.5 | SW8260B | VOC | 1,1,2-Trichloroethane | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1283 | BVBS1283S002 | N | 14 Jul 2014 | 4.5 - 5.5 | SW8260B | VOC | 1,1-Dichloroethane | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1283 | BVBS1283S002 | N | 14 Jul 2014 | 4.5 - 5.5 | SW8260B | VOC | 1,1-Dichloroethene | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1283 | BVBS1283S002 | N | 14 Jul 2014 | 4.5 - 5.5 | SW8260B | VOC | 1,1-Dichloropropene | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1283 | BVBS1283S002 | N | 14 Jul 2014 | 4.5 - 5.5 | SW8260B | VOC | 1,2,3-Trichlorobenzene | 2 U | 2 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1283 | BVBS1283S002 | N | 14 Jul 2014 | 4.5 - 5.5 | SW8260B | VOC | 1,2,3-Trichloropropane | 2 U | 2 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1283 | BVBS1283S002 | N | 14 Jul 2014 | 4.5 - 5.5 | SW8260B | VOC | 1,2,4-Trichlorobenzene | 2 U | 2 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1283 | BVBS1283S002 | N | 14 Jul 2014 | 4.5 - 5.5 | SW8260B | VOC | 1,2,4-Trimethylbenzene | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1283 | BVBS1283S002 | N | 14 Jul 2014 | 4.5 - 5.5 | SW8260B | VOC | 1,2-Dibromo-3-chloropropane | 2 U | 2 | 9.8 | 10 | µg/kg | | N |
| SO | BVBS1283 | BVBS1283S002 | N | 14 Jul 2014 | 4.5 - 5.5 | SW8260B | VOC | 1,2-Dibromoethane (EDB) | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1283 | BVBS1283S002 | N | 14 Jul 2014 | 4.5 - 5.5 | SW8260B | VOC | 1,2-Dichlorobenzene | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1283 | BVBS1283S002 | N | 14 Jul 2014 | 4.5 - 5.5 | SW8260B | VOC | 1,2-Dichloroethane | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1283 | BVBS1283S002 | N | 14 Jul 2014 | 4.5 - 5.5 | SW8260B | VOC | 1,2-Dichloropropane | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |

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**Test Stand Biovent Analytical Data**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | FSP SL | Units | FSP Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1283 | BVBS1283S002 | N | 14 Jul 2014 | 4.5 - 5.5 | SW8260B | VOC | 1,3,5-Trimethylbenzene | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1283 | BVBS1283S002 | N | 14 Jul 2014 | 4.5 - 5.5 | SW8260B | VOC | 1,3-Dichlorobenzene | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1283 | BVBS1283S002 | N | 14 Jul 2014 | 4.5 - 5.5 | SW8260B | VOC | 1,3-Dichloropropane | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1283 | BVBS1283S002 | N | 14 Jul 2014 | 4.5 - 5.5 | SW8260B | VOC | 1,4-Dichlorobenzene | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1283 | BVBS1283S002 | N | 14 Jul 2014 | 4.5 - 5.5 | SW8260B | VOC | 2,2-Dichloropropane | 2 U | 2 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1283 | BVBS1283S002 | N | 14 Jul 2014 | 4.5 - 5.5 | SW8260B | VOC | 2-Butanone (MEK) | 4.9 U | 4.9 | 20 | 20 | µg/kg | | N |
| SO | BVBS1283 | BVBS1283S002 | N | 14 Jul 2014 | 4.5 - 5.5 | SW8260B | VOC | 2-Chloro-1,1,1-trifluoroethane | 2 U | 2 | 9.8 | 10 | µg/kg | | N |
| SO | BVBS1283 | BVBS1283S002 | N | 14 Jul 2014 | 4.5 - 5.5 | SW8260B | VOC | 2-Chloroethyl vinyl ether | 2 U | 2 | 9.8 | 10 | µg/kg | | N |
| SO | BVBS1283 | BVBS1283S002 | N | 14 Jul 2014 | 4.5 - 5.5 | SW8260B | VOC | 2-Chlorotoluene | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1283 | BVBS1283S002 | N | 14 Jul 2014 | 4.5 - 5.5 | SW8260B | VOC | 2-Hexanone | 4.9 U | 4.9 | 9.8 | 10 | µg/kg | | N |
| SO | BVBS1283 | BVBS1283S002 | N | 14 Jul 2014 | 4.5 - 5.5 | SW8260B | VOC | 4-Chlorotoluene | 0.98 U | 0.98 | 9.8 | 10 | µg/kg | | N |
| SO | BVBS1283 | BVBS1283S002 | N | 14 Jul 2014 | 4.5 - 5.5 | SW8260B | VOC | 4-Methyl-2-pentanone (MIBK) | 4.9 U | 4.9 | 9.8 | 10 | µg/kg | | N |
| SO | BVBS1283 | BVBS1283S002 | N | 14 Jul 2014 | 4.5 - 5.5 | SW8260B | VOC | Acetone | 4.9 U | 4.9 | 20 | 20 | µg/kg | | N |
| SO | BVBS1283 | BVBS1283S002 | N | 14 Jul 2014 | 4.5 - 5.5 | SW8260B | VOC | Benzene | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1283 | BVBS1283S002 | N | 14 Jul 2014 | 4.5 - 5.5 | SW8260B | VOC | Bromobenzene | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1283 | BVBS1283S002 | N | 14 Jul 2014 | 4.5 - 5.5 | SW8260B | VOC | Bromochloromethane | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1283 | BVBS1283S002 | N | 14 Jul 2014 | 4.5 - 5.5 | SW8260B | VOC | Bromodichloromethane | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1283 | BVBS1283S002 | N | 14 Jul 2014 | 4.5 - 5.5 | SW8260B | VOC | Bromoform | 2 U | 2 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1283 | BVBS1283S002 | N | 14 Jul 2014 | 4.5 - 5.5 | SW8260B | VOC | Bromomethane | 2 U | 2 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1283 | BVBS1283S002 | N | 14 Jul 2014 | 4.5 - 5.5 | SW8260B | VOC | Carbon tetrachloride | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1283 | BVBS1283S002 | N | 14 Jul 2014 | 4.5 - 5.5 | SW8260B | VOC | Chlorobenzene | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1283 | BVBS1283S002 | N | 14 Jul 2014 | 4.5 - 5.5 | SW8260B | VOC | Chloroethane | 2 U | 2 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1283 | BVBS1283S002 | N | 14 Jul 2014 | 4.5 - 5.5 | SW8260B | VOC | Chloromethane | 2 U | 2 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1283 | BVBS1283S002 | N | 14 Jul 2014 | 4.5 - 5.5 | SW8260B | VOC | Chlorotrifluoroethylene | 2 U | 2 | 9.8 | 10 | µg/kg | | N |
| SO | BVBS1283 | BVBS1283S002 | N | 14 Jul 2014 | 4.5 - 5.5 | SW8260B | VOC | cis-1,2-Dichloroethene | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1283 | BVBS1283S002 | N | 14 Jul 2014 | 4.5 - 5.5 | SW8260B | VOC | cis-1,3-Dichloropropene | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1283 | BVBS1283S002 | N | 14 Jul 2014 | 4.5 - 5.5 | SW8260B | VOC | Dibromochloromethane | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1283 | BVBS1283S002 | N | 14 Jul 2014 | 4.5 - 5.5 | SW8260B | VOC | Dibromomethane | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1283 | BVBS1283S002 | N | 14 Jul 2014 | 4.5 - 5.5 | SW8260B | VOC | Dichlorodifluoromethane | 2 U | 2 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1283 | BVBS1283S002 | N | 14 Jul 2014 | 4.5 - 5.5 | SW8260B | VOC | Ethylbenzene | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1283 | BVBS1283S002 | N | 14 Jul 2014 | 4.5 - 5.5 | SW8260B | VOC | Hexachlorobutadiene | 2 U | 2 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1283 | BVBS1283S002 | N | 14 Jul 2014 | 4.5 - 5.5 | SW8260B | VOC | Isopropylbenzene | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1283 | BVBS1283S002 | N | 14 Jul 2014 | 4.5 - 5.5 | SW8260B | VOC | m,p-Xylenes | 2 U | 2 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1283 | BVBS1283S002 | N | 14 Jul 2014 | 4.5 - 5.5 | SW8260B | VOC | Methylene chloride | 2 U | 2 | 9.8 | 10 | µg/kg | | N |
| SO | BVBS1283 | BVBS1283S002 | N | 14 Jul 2014 | 4.5 - 5.5 | SW8260B | VOC | Methyl-tert-butyl Ether (MTBE) | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1283 | BVBS1283S002 | N | 14 Jul 2014 | 4.5 - 5.5 | SW8260B | VOC | n-butylbenzene | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1283 | BVBS1283S002 | N | 14 Jul 2014 | 4.5 - 5.5 | SW8260B | VOC | n-Propylbenzene | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1283 | BVBS1283S002 | N | 14 Jul 2014 | 4.5 - 5.5 | SW8260B | VOC | o-Xylene | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |

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**Test Stand Biovent Analytical Data**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | FSP SL | Units | FSP Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1283 | BVBS1283S002 | N | 14 Jul 2014 | 4.5 - 5.5 | SW8260B | VOC | p-Isopropyltoluene | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1283 | BVBS1283S002 | N | 14 Jul 2014 | 4.5 - 5.5 | SW8260B | VOC | sec-Butylbenzene | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1283 | BVBS1283S002 | N | 14 Jul 2014 | 4.5 - 5.5 | SW8260B | VOC | Styrene | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1283 | BVBS1283S002 | N | 14 Jul 2014 | 4.5 - 5.5 | SW8260B | VOC | tert-Butylbenzene | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1283 | BVBS1283S002 | N | 14 Jul 2014 | 4.5 - 5.5 | SW8260B | VOC | Tetrachloroethene | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1283 | BVBS1283S002 | N | 14 Jul 2014 | 4.5 - 5.5 | SW8260B | VOC | Toluene | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1283 | BVBS1283S002 | N | 14 Jul 2014 | 4.5 - 5.5 | SW8260B | VOC | trans-1,2-Dichloroethene | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1283 | BVBS1283S002 | N | 14 Jul 2014 | 4.5 - 5.5 | SW8260B | VOC | trans-1,3-Dichloropropene | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1283 | BVBS1283S002 | N | 14 Jul 2014 | 4.5 - 5.5 | SW8260B | VOC | Trichloroethene | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1283 | BVBS1283S002 | N | 14 Jul 2014 | 4.5 - 5.5 | SW8260B | VOC | Trichlorofluoromethane | 2 U | 2 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1283 | BVBS1283S002 | N | 14 Jul 2014 | 4.5 - 5.5 | SW8260B | VOC | Trichloromethane (Chloroform) | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1283 | BVBS1283S002 | N | 14 Jul 2014 | 4.5 - 5.5 | SW8260B | VOC | Vinyl chloride | 2 U | 2 | 4.9 | 5 | µg/kg | | N |
| SS | BVBS1282 | BVBS1282S003 | N | 11 Sep 2014 | 1.5 - 2 | SW9045D | GENCHEM | pH | 9.24 = | | | | PH UNITS | | NC |
| SS | BVBS1282 | BVBS1282S003 | N | 11 Sep 2014 | 1.5 - 2 | Walkley-Black | GENCHEM | Total Organic Carbon | 628 U | 628 | 628 | | mg/kg | | NC |
| SS | BVBS1282 | BVBS1282S003 | N | 11 Sep 2014 | 1.5 - 2 | M8015D | HC | Diesel Range Organics (C12-C14) | 5300 U | 2600 | 5300 | 5000 | µg/kg | X | N |
| SS | BVBS1282 | BVBS1282S003 | N | 11 Sep 2014 | 1.5 - 2 | M8015D | HC | Diesel Range Organics (C15-C20) | 5300 U | 2600 | 5300 | 5000 | µg/kg | X | N |
| SS | BVBS1282 | BVBS1282S003 | N | 11 Sep 2014 | 1.5 - 2 | M8015D | HC | Diesel Range Organics (C21-C30) | 16000 = | 2600 | 5300 | 5000 | µg/kg | X | Y |
| SS | BVBS1282 | BVBS1282S003 | N | 11 Sep 2014 | 1.5 - 2 | M8015D | HC | Diesel Range Organics (C8-C11) | 5300 U | 2600 | 5300 | 1000 | µg/kg | X | RL |
| SS | BVBS1282 | BVBS1282S003 | N | 11 Sep 2014 | 1.5 - 2 | SW8015B | HC | GRO (C6-C12) | 1200 U | 580 | 1200 | 1000 | µg/kg | X | N |
| SS | BVBS1282 | BVBS1282S003 | N | 11 Sep 2014 | 1.5 - 2 | M8015D | HC | ORO (C31-C40) | 31000 = | 5300 | 11000 | 10000 | µg/kg | X | Y |
| SS | BVBS1282 | BVBS1282S003 | N | 11 Sep 2014 | 1.5 - 2 | M8015D | HC | TOTAL EFH(C8-C40) | 47000 = | 2600 | 5300 | 10000 | µg/kg | X | Y |
| SS | BVBS1282 | BVBS1282S003 | N | 11 Sep 2014 | 1.5 - 2 | SW8270C-SIM | PAH | 1-Methylnaphthalene | 11 U | 5.3 | 11 | 2.5 | µg/kg | X | RL |
| SS | BVBS1282 | BVBS1282S003 | N | 11 Sep 2014 | 1.5 - 2 | SW8270C-SIM | PAH | 2-Methylnaphthalene | 11 U | 5.3 | 11 | 2.5 | µg/kg | X | RL |
| SS | BVBS1282 | BVBS1282S003 | N | 11 Sep 2014 | 1.5 - 2 | SW8270C-SIM | PAH | Acenaphthene | 11 U | 5.3 | 11 | 2.5 | µg/kg | X | RL |
| SS | BVBS1282 | BVBS1282S003 | N | 11 Sep 2014 | 1.5 - 2 | SW8270C-SIM | PAH | Acenaphthylene | 11 U | 5.3 | 11 | 2.5 | µg/kg | X | RL |
| SS | BVBS1282 | BVBS1282S003 | N | 11 Sep 2014 | 1.5 - 2 | SW8270C-SIM | PAH | Anthracene | 11 U | 5.3 | 11 | 2.5 | µg/kg | X | RL |
| SS | BVBS1282 | BVBS1282S003 | N | 11 Sep 2014 | 1.5 - 2 | SW8270C-SIM | PAH | Benzo(a)anthracene | 20 = | 5.3 | 11 | | µg/kg | | NC |
| SS | BVBS1282 | BVBS1282S003 | N | 11 Sep 2014 | 1.5 - 2 | SW8270C-SIM | PAH | Benzo(a)pyrene | 20 = | 5.3 | 11 | | µg/kg | | NC |
| SS | BVBS1282 | BVBS1282S003 | N | 11 Sep 2014 | 1.5 - 2 | SW8270C-SIM | PAH | Benzo(b)fluoranthene | 21 = | 5.3 | 11 | | µg/kg | | NC |
| SS | BVBS1282 | BVBS1282S003 | N | 11 Sep 2014 | 1.5 - 2 | SW8270C-SIM | PAH | Benzo(ghi)perylene | 8.9 J | 5.3 | 11 | 2.5 | µg/kg | X | Y |
| SS | BVBS1282 | BVBS1282S003 | N | 11 Sep 2014 | 1.5 - 2 | SW8270C-SIM | PAH | Benzo(k)fluoranthene | 5.8 J | 5.3 | 11 | | µg/kg | | NC |
| SS | BVBS1282 | BVBS1282S003 | N | 11 Sep 2014 | 1.5 - 2 | SW8270C-SIM | PAH | Chrysene | 22 = | 5.3 | 11 | | µg/kg | | NC |
| SS | BVBS1282 | BVBS1282S003 | N | 11 Sep 2014 | 1.5 - 2 | SW8270C-SIM | PAH | Dibenzo(a,h)anthracene | 11 U | 5.3 | 11 | | µg/kg | | NC |
| SS | BVBS1282 | BVBS1282S003 | N | 11 Sep 2014 | 1.5 - 2 | SW8270C-SIM | PAH | Fluoranthene | 34 = | 5.3 | 11 | 5.2 | µg/kg | X | Y |
| SS | BVBS1282 | BVBS1282S003 | N | 11 Sep 2014 | 1.5 - 2 | SW8270C-SIM | PAH | Fluorene | 11 U | 5.3 | 11 | 3.8 | µg/kg | X | RL |
| SS | BVBS1282 | BVBS1282S003 | N | 11 Sep 2014 | 1.5 - 2 | SW8270C-SIM | PAH | Indeno(1,2,3-cd)pyrene | 7.3 J | 5.3 | 11 | | µg/kg | | NC |
| SS | BVBS1282 | BVBS1282S003 | N | 11 Sep 2014 | 1.5 - 2 | SW8270C-SIM | PAH | Naphthalene | 11 U | 5.3 | 11 | 3.6 | µg/kg | X | RL |
| SS | BVBS1282 | BVBS1282S003 | N | 11 Sep 2014 | 1.5 - 2 | SW8270C-SIM | PAH | PAHTEQM | 25.63 = | | | 4.47 | µg/kg | X | Y |

APPENDIX D-1

**Test Stand Biovent Analytical Data**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | FSP SL | Units | FSP Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SS | BVBS1282 | BVBS1282S003 | N | 11 Sep 2014 | 1.5 - 2 | SW8270C-SIM | PAH | Phenanthrene | 15 = | 5.3 | 11 | 3.9 | µg/kg | X | Y |
| SS | BVBS1282 | BVBS1282S003 | N | 11 Sep 2014 | 1.5 - 2 | SW8270C-SIM | PAH | Pyrene | 37 = | 5.3 | 11 | 5.6 | µg/kg | X | Y |
| SS | BVBS1282 | BVBS1282S003 | N | 11 Sep 2014 | 1.5 - 2 | SW8270C-SIM | PHTH | Bis(2-ethylhexyl)phthalate | 21 U | 11 | 21 | 61 | µg/kg | | N |
| SS | BVBS1282 | BVBS1282S003 | N | 11 Sep 2014 | 1.5 - 2 | SW8270C-SIM | PHTH | Butyl benzyl phthalate | 21 U | 11 | 21 | 100 | µg/kg | | N |
| SS | BVBS1282 | BVBS1282S003 | N | 11 Sep 2014 | 1.5 - 2 | SW8270C-SIM | PHTH | Diethyl phthalate | 21 U | 11 | 21 | 27 | µg/kg | | N |
| SS | BVBS1282 | BVBS1282S003 | N | 11 Sep 2014 | 1.5 - 2 | SW8270C-SIM | PHTH | Dimethyl phthalate | 21 U | 11 | 21 | 27 | µg/kg | | N |
| SS | BVBS1282 | BVBS1282S003 | N | 11 Sep 2014 | 1.5 - 2 | SW8270C-SIM | PHTH | Di-n-butyl phthalate | 21 U | 11 | 21 | 27 | µg/kg | | N |
| SS | BVBS1282 | BVBS1282S003 | N | 11 Sep 2014 | 1.5 - 2 | SW8270C-SIM | PHTH | Di-n-octyl phthalate | 21 U | 11 | 21 | 27 | µg/kg | | N |
| SS | BVBS1282 | BVBS1282S003 | N | 11 Sep 2014 | 1.5 - 2 | SW8260B | SVOC | Diisopropyl ether | 1 U | 1 | 10 | 10 | µg/kg | | N |
| SS | BVBS1282 | BVBS1282S003 | N | 11 Sep 2014 | 1.5 - 2 | SW8270C-SIM | SVOC | n-Nitrosodimethylamine | 21 U | 11 | 21 | 10 | µg/kg | X | RL |
| SS | BVBS1282 | BVBS1282S003 | N | 11 Sep 2014 | 1.5 - 2 | SW8260B | SVOC | tert-Amyl methyl ether | 1 U | 1 | 5.2 | 5 | µg/kg | | N |
| SS | BVBS1282 | BVBS1282S003 | N | 11 Sep 2014 | 1.5 - 2 | SW8260B | SVOC | tert-Butyl alcohol | 10 U | 10 | 52 | 50 | µg/kg | | N |
| SS | BVBS1282 | BVBS1282S003 | N | 11 Sep 2014 | 1.5 - 2 | SW8260B | SVOC | tert-Butyl ethyl ether | 1 U | 1 | 5.2 | 5 | µg/kg | | N |
| SS | BVBS1282 | BVBS1282S003 | N | 11 Sep 2014 | 1.5 - 2 | SW8260B | VOC | 1,1,1,2-Tetrachloroethane | 1 U | 1 | 5.2 | 5 | µg/kg | | N |
| SS | BVBS1282 | BVBS1282S003 | N | 11 Sep 2014 | 1.5 - 2 | SW8260B | VOC | 1,1,1-Trichloroethane | 1 U | 1 | 5.2 | 5 | µg/kg | | N |
| SS | BVBS1282 | BVBS1282S003 | N | 11 Sep 2014 | 1.5 - 2 | SW8260B | VOC | 1,1,2,2-Tetrachloroethane | 1 U | 1 | 5.2 | 5 | µg/kg | | N |
| SS | BVBS1282 | BVBS1282S003 | N | 11 Sep 2014 | 1.5 - 2 | SW8260B | VOC | 1,1,2-Trichloro-1,2,2-trifluoroethane | 2.1 U | 2.1 | 5.2 | 5 | µg/kg | | N |
| SS | BVBS1282 | BVBS1282S003 | N | 11 Sep 2014 | 1.5 - 2 | SW8260B | VOC | 1,1,2-Trichloroethane | 1 U | 1 | 5.2 | 5 | µg/kg | | N |
| SS | BVBS1282 | BVBS1282S003 | N | 11 Sep 2014 | 1.5 - 2 | SW8260B | VOC | 1,1-Dichloroethane | 1 U | 1 | 5.2 | 5 | µg/kg | | N |
| SS | BVBS1282 | BVBS1282S003 | N | 11 Sep 2014 | 1.5 - 2 | SW8260B | VOC | 1,1-Dichloroethene | 1 U | 1 | 5.2 | 5 | µg/kg | | N |
| SS | BVBS1282 | BVBS1282S003 | N | 11 Sep 2014 | 1.5 - 2 | SW8260B | VOC | 1,1-Dichloropropene | 1 U | 1 | 5.2 | 5 | µg/kg | | N |
| SS | BVBS1282 | BVBS1282S003 | N | 11 Sep 2014 | 1.5 - 2 | SW8260B | VOC | 1,2,3-Trichlorobenzene | 2.1 U | 2.1 | 5.2 | 5 | µg/kg | | N |
| SS | BVBS1282 | BVBS1282S003 | N | 11 Sep 2014 | 1.5 - 2 | SW8260B | VOC | 1,2,3-Trichloropropane | 2.1 U | 2.1 | 5.2 | 5 | µg/kg | | N |
| SS | BVBS1282 | BVBS1282S003 | N | 11 Sep 2014 | 1.5 - 2 | SW8260B | VOC | 1,2,4-Trichlorobenzene | 2.1 U | 2.1 | 5.2 | 5 | µg/kg | | N |
| SS | BVBS1282 | BVBS1282S003 | N | 11 Sep 2014 | 1.5 - 2 | SW8260B | VOC | 1,2,4-Trimethylbenzene | 1 U | 1 | 5.2 | 5 | µg/kg | | N |
| SS | BVBS1282 | BVBS1282S003 | N | 11 Sep 2014 | 1.5 - 2 | SW8260B | VOC | 1,2-Dibromo-3-chloropropane | 2.1 U | 2.1 | 10 | 10 | µg/kg | | N |
| SS | BVBS1282 | BVBS1282S003 | N | 11 Sep 2014 | 1.5 - 2 | SW8260B | VOC | 1,2-Dibromoethane (EDB) | 1 U | 1 | 5.2 | 5 | µg/kg | | N |
| SS | BVBS1282 | BVBS1282S003 | N | 11 Sep 2014 | 1.5 - 2 | SW8260B | VOC | 1,2-Dichlorobenzene | 1 U | 1 | 5.2 | 5 | µg/kg | | N |
| SS | BVBS1282 | BVBS1282S003 | N | 11 Sep 2014 | 1.5 - 2 | SW8260B | VOC | 1,2-Dichloroethane | 1 U | 1 | 5.2 | 5 | µg/kg | | N |
| SS | BVBS1282 | BVBS1282S003 | N | 11 Sep 2014 | 1.5 - 2 | SW8260B | VOC | 1,2-Dichloropropane | 1 U | 1 | 5.2 | 5 | µg/kg | | N |
| SS | BVBS1282 | BVBS1282S003 | N | 11 Sep 2014 | 1.5 - 2 | SW8260B | VOC | 1,3,5-Trimethylbenzene | 1 U | 1 | 5.2 | 5 | µg/kg | | N |
| SS | BVBS1282 | BVBS1282S003 | N | 11 Sep 2014 | 1.5 - 2 | SW8260B | VOC | 1,3-Dichlorobenzene | 1 U | 1 | 5.2 | 5 | µg/kg | | N |
| SS | BVBS1282 | BVBS1282S003 | N | 11 Sep 2014 | 1.5 - 2 | SW8260B | VOC | 1,3-Dichloropropane | 1 U | 1 | 5.2 | 5 | µg/kg | | N |
| SS | BVBS1282 | BVBS1282S003 | N | 11 Sep 2014 | 1.5 - 2 | SW8260B | VOC | 1,4-Dichlorobenzene | 1 U | 1 | 5.2 | 5 | µg/kg | | N |
| SS | BVBS1282 | BVBS1282S003 | N | 11 Sep 2014 | 1.5 - 2 | SW8260B | VOC | 2,2-Dichloropropane | 2.1 U | 2.1 | 5.2 | 5 | µg/kg | | N |
| SS | BVBS1282 | BVBS1282S003 | N | 11 Sep 2014 | 1.5 - 2 | SW8260B | VOC | 2-Butanone (MEK) | 5.2 U | 5.2 | 21 | 20 | µg/kg | | N |
| SS | BVBS1282 | BVBS1282S003 | N | 11 Sep 2014 | 1.5 - 2 | SW8260B | VOC | 2-Chloro-1,1,1-trifluoroethane | 2.1 U | 2.1 | 10 | 10 | µg/kg | | N |
| SS | BVBS1282 | BVBS1282S003 | N | 11 Sep 2014 | 1.5 - 2 | SW8260B | VOC | 2-Chloroethyl vinyl ether | 2.1 U | 2.1 | 10 | 10 | µg/kg | | N |

APPENDIX D-1

**Test Stand Biovent Analytical Data**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | FSP SL | Units | FSP Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SS | BVBS1282 | BVBS1282S003 | N | 11 Sep 2014 | 1.5 - 2 | SW8260B | VOC | 2-Chlorotoluene | 1 U | 1 | 5.2 | 5 | µg/kg | | N |
| SS | BVBS1282 | BVBS1282S003 | N | 11 Sep 2014 | 1.5 - 2 | SW8260B | VOC | 2-Hexanone | 5.2 U | 5.2 | 10 | 10 | µg/kg | | N |
| SS | BVBS1282 | BVBS1282S003 | N | 11 Sep 2014 | 1.5 - 2 | SW8260B | VOC | 4-Chlorotoluene | 1 U | 1 | 10 | 10 | µg/kg | | N |
| SS | BVBS1282 | BVBS1282S003 | N | 11 Sep 2014 | 1.5 - 2 | SW8260B | VOC | 4-Methyl-2-pentanone (MIBK) | 5.2 U | 5.2 | 10 | 10 | µg/kg | | N |
| SS | BVBS1282 | BVBS1282S003 | N | 11 Sep 2014 | 1.5 - 2 | SW8260B | VOC | Acetone | 5.2 U | 5.2 | 21 | 20 | µg/kg | | N |
| SS | BVBS1282 | BVBS1282S003 | N | 11 Sep 2014 | 1.5 - 2 | SW8260B | VOC | Benzene | 1 U | 1 | 5.2 | 5 | µg/kg | | N |
| SS | BVBS1282 | BVBS1282S003 | N | 11 Sep 2014 | 1.5 - 2 | SW8260B | VOC | Bromobenzene | 1 U | 1 | 5.2 | 5 | µg/kg | | N |
| SS | BVBS1282 | BVBS1282S003 | N | 11 Sep 2014 | 1.5 - 2 | SW8260B | VOC | Bromochloromethane | 1 U | 1 | 5.2 | 5 | µg/kg | | N |
| SS | BVBS1282 | BVBS1282S003 | N | 11 Sep 2014 | 1.5 - 2 | SW8260B | VOC | Bromodichloromethane | 1 U | 1 | 5.2 | 5 | µg/kg | | N |
| SS | BVBS1282 | BVBS1282S003 | N | 11 Sep 2014 | 1.5 - 2 | SW8260B | VOC | Bromoform | 2.1 U | 2.1 | 5.2 | 5 | µg/kg | | N |
| SS | BVBS1282 | BVBS1282S003 | N | 11 Sep 2014 | 1.5 - 2 | SW8260B | VOC | Bromomethane | 2.1 U | 2.1 | 5.2 | 5 | µg/kg | | N |
| SS | BVBS1282 | BVBS1282S003 | N | 11 Sep 2014 | 1.5 - 2 | SW8260B | VOC | Carbon tetrachloride | 1 U | 1 | 5.2 | 5 | µg/kg | | N |
| SS | BVBS1282 | BVBS1282S003 | N | 11 Sep 2014 | 1.5 - 2 | SW8260B | VOC | Chlorobenzene | 1 U | 1 | 5.2 | 5 | µg/kg | | N |
| SS | BVBS1282 | BVBS1282S003 | N | 11 Sep 2014 | 1.5 - 2 | SW8260B | VOC | Chloroethane | 2.1 U | 2.1 | 5.2 | 5 | µg/kg | | N |
| SS | BVBS1282 | BVBS1282S003 | N | 11 Sep 2014 | 1.5 - 2 | SW8260B | VOC | Chloromethane | 2.1 U | 2.1 | 5.2 | 5 | µg/kg | | N |
| SS | BVBS1282 | BVBS1282S003 | N | 11 Sep 2014 | 1.5 - 2 | SW8260B | VOC | Chlorotrifluoroethylene | 2.1 U | 2.1 | 10 | 10 | µg/kg | | N |
| SS | BVBS1282 | BVBS1282S003 | N | 11 Sep 2014 | 1.5 - 2 | SW8260B | VOC | cis-1,2-Dichloroethene | 1 U | 1 | 5.2 | 5 | µg/kg | | N |
| SS | BVBS1282 | BVBS1282S003 | N | 11 Sep 2014 | 1.5 - 2 | SW8260B | VOC | cis-1,3-Dichloropropene | 1 U | 1 | 5.2 | 5 | µg/kg | | N |
| SS | BVBS1282 | BVBS1282S003 | N | 11 Sep 2014 | 1.5 - 2 | SW8260B | VOC | Dibromochloromethane | 1 U | 1 | 5.2 | 5 | µg/kg | | N |
| SS | BVBS1282 | BVBS1282S003 | N | 11 Sep 2014 | 1.5 - 2 | SW8260B | VOC | Dibromomethane | 1 U | 1 | 5.2 | 5 | µg/kg | | N |
| SS | BVBS1282 | BVBS1282S003 | N | 11 Sep 2014 | 1.5 - 2 | SW8260B | VOC | Dichlorodifluoromethane | 2.1 U | 2.1 | 5.2 | 5 | µg/kg | | N |
| SS | BVBS1282 | BVBS1282S003 | N | 11 Sep 2014 | 1.5 - 2 | SW8260B | VOC | Ethylbenzene | 1 U | 1 | 5.2 | 5 | µg/kg | | N |
| SS | BVBS1282 | BVBS1282S003 | N | 11 Sep 2014 | 1.5 - 2 | SW8260B | VOC | Hexachlorobutadiene | 2.1 U | 2.1 | 5.2 | 5 | µg/kg | | N |
| SS | BVBS1282 | BVBS1282S003 | N | 11 Sep 2014 | 1.5 - 2 | SW8260B | VOC | Isopropylbenzene | 1 U | 1 | 5.2 | 5 | µg/kg | | N |
| SS | BVBS1282 | BVBS1282S003 | N | 11 Sep 2014 | 1.5 - 2 | SW8260B | VOC | m,p-Xylenes | 2.1 U | 2.1 | 5.2 | 5 | µg/kg | | N |
| SS | BVBS1282 | BVBS1282S003 | N | 11 Sep 2014 | 1.5 - 2 | SW8260B | VOC | Methylene chloride | 2.1 U | 2.1 | 10 | 10 | µg/kg | | N |
| SS | BVBS1282 | BVBS1282S003 | N | 11 Sep 2014 | 1.5 - 2 | SW8260B | VOC | Methyl-tert-butyl Ether (MTBE) | 1 U | 1 | 5.2 | 5 | µg/kg | | N |
| SS | BVBS1282 | BVBS1282S003 | N | 11 Sep 2014 | 1.5 - 2 | SW8260B | VOC | n-butylbenzene | 1 U | 1 | 5.2 | 5 | µg/kg | | N |
| SS | BVBS1282 | BVBS1282S003 | N | 11 Sep 2014 | 1.5 - 2 | SW8260B | VOC | n-Propylbenzene | 1 U | 1 | 5.2 | 5 | µg/kg | | N |
| SS | BVBS1282 | BVBS1282S003 | N | 11 Sep 2014 | 1.5 - 2 | SW8260B | VOC | o-Xylene | 1 U | 1 | 5.2 | 5 | µg/kg | | N |
| SS | BVBS1282 | BVBS1282S003 | N | 11 Sep 2014 | 1.5 - 2 | SW8260B | VOC | p-Isopropyltoluene | 1 U | 1 | 5.2 | 5 | µg/kg | | N |
| SS | BVBS1282 | BVBS1282S003 | N | 11 Sep 2014 | 1.5 - 2 | SW8260B | VOC | sec-Butylbenzene | 1 U | 1 | 5.2 | 5 | µg/kg | | N |
| SS | BVBS1282 | BVBS1282S003 | N | 11 Sep 2014 | 1.5 - 2 | SW8260B | VOC | Styrene | 1 U | 1 | 5.2 | 5 | µg/kg | | N |
| SS | BVBS1282 | BVBS1282S003 | N | 11 Sep 2014 | 1.5 - 2 | SW8260B | VOC | tert-Butylbenzene | 1 U | 1 | 5.2 | 5 | µg/kg | | N |
| SS | BVBS1282 | BVBS1282S003 | N | 11 Sep 2014 | 1.5 - 2 | SW8260B | VOC | Tetrachloroethene | 1 U | 1 | 5.2 | 5 | µg/kg | | N |
| SS | BVBS1282 | BVBS1282S003 | N | 11 Sep 2014 | 1.5 - 2 | SW8260B | VOC | Toluene | 1 U | 1 | 5.2 | 5 | µg/kg | | N |
| SS | BVBS1282 | BVBS1282S003 | N | 11 Sep 2014 | 1.5 - 2 | SW8260B | VOC | trans-1,2-Dichloroethene | 1 U | 1 | 5.2 | 5 | µg/kg | | N |
| SS | BVBS1282 | BVBS1282S003 | N | 11 Sep 2014 | 1.5 - 2 | SW8260B | VOC | trans-1,3-Dichloropropene | 1 U | 1 | 5.2 | 5 | µg/kg | | N |

APPENDIX D-1

**Test Stand Biovent Analytical Data**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | FSP SL | Units | FSP Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SS | BVBS1282 | BVBS1282S003 | N | 11 Sep 2014 | 1.5 - 2 | SW8260B | VOC | Trichloroethene | 1 U | 1 | 5.2 | 5 | µg/kg | | N |
| SS | BVBS1282 | BVBS1282S003 | N | 11 Sep 2014 | 1.5 - 2 | SW8260B | VOC | Trichlorofluoromethane | 2.1 U | 2.1 | 5.2 | 5 | µg/kg | | N |
| SS | BVBS1282 | BVBS1282S003 | N | 11 Sep 2014 | 1.5 - 2 | SW8260B | VOC | Trichloromethane (Chloroform) | 1 U | 1 | 5.2 | 5 | µg/kg | | N |
| SS | BVBS1282 | BVBS1282S003 | N | 11 Sep 2014 | 1.5 - 2 | SW8260B | VOC | Vinyl chloride | 2.1 U | 2.1 | 5.2 | 5 | µg/kg | | N |
| SS | BVBS1284 | BVBS1284D001 | FD | 14 Jul 2014 | 1 - 2 | SW9045D | GENCHEM | pH | 7.57 = | | | | PH UNITS | | NC |
| SS | BVBS1284 | BVBS1284D001 | FD | 14 Jul 2014 | 1 - 2 | Walkley-Black | GENCHEM | Total Organic Carbon | 615 U | 615 | 615 | | mg/kg | | NC |
| SS | BVBS1284 | BVBS1284D001 | FD | 14 Jul 2014 | 1 - 2 | M8015D | HC | Diesel Range Organics (C12-C14) | 5300 U | 2700 | 5300 | 5000 | µg/kg | X | N |
| SS | BVBS1284 | BVBS1284D001 | FD | 14 Jul 2014 | 1 - 2 | M8015D | HC | Diesel Range Organics (C15-C20) | 5300 U | 2700 | 5300 | 5000 | µg/kg | X | N |
| SS | BVBS1284 | BVBS1284D001 | FD | 14 Jul 2014 | 1 - 2 | M8015D | HC | Diesel Range Organics (C21-C30) | 5300 U | 2700 | 5300 | 5000 | µg/kg | X | N |
| SS | BVBS1284 | BVBS1284D001 | FD | 14 Jul 2014 | 1 - 2 | M8015D | HC | Diesel Range Organics (C8-C11) | 5300 U | 2700 | 5300 | 1000 | µg/kg | X | RL |
| SS | BVBS1284 | BVBS1284D001 | FD | 14 Jul 2014 | 1 - 2 | SW8015B | HC | GRO (C6-C12) | 920 U | 460 | 920 | 1000 | µg/kg | | N |
| SS | BVBS1284 | BVBS1284D001 | FD | 14 Jul 2014 | 1 - 2 | M8015D | HC | ORO (C31-C40) | 11000 U | 5300 | 11000 | 10000 | µg/kg | X | N |
| SS | BVBS1284 | BVBS1284D001 | FD | 14 Jul 2014 | 1 - 2 | M8015D | HC | TOTAL EFH(C8-C40) | 5300 U | 2700 | 5300 | 10000 | µg/kg | | N |
| SS | BVBS1284 | BVBS1284D001 | FD | 14 Jul 2014 | 1 - 2 | SW8270C-SIM | PAH | 1-Methylnaphthalene | 11 U | 5.3 | 11 | 2.5 | µg/kg | X | RL |
| SS | BVBS1284 | BVBS1284D001 | FD | 14 Jul 2014 | 1 - 2 | SW8270C-SIM | PAH | 2-Methylnaphthalene | 11 U | 5.3 | 11 | 2.5 | µg/kg | X | RL |
| SS | BVBS1284 | BVBS1284D001 | FD | 14 Jul 2014 | 1 - 2 | SW8270C-SIM | PAH | Acenaphthene | 11 U | 5.3 | 11 | 2.5 | µg/kg | X | RL |
| SS | BVBS1284 | BVBS1284D001 | FD | 14 Jul 2014 | 1 - 2 | SW8270C-SIM | PAH | Acenaphthylene | 11 U | 5.3 | 11 | 2.5 | µg/kg | X | RL |
| SS | BVBS1284 | BVBS1284D001 | FD | 14 Jul 2014 | 1 - 2 | SW8270C-SIM | PAH | Anthracene | 11 U | 5.3 | 11 | 2.5 | µg/kg | X | RL |
| SS | BVBS1284 | BVBS1284D001 | FD | 14 Jul 2014 | 1 - 2 | SW8270C-SIM | PAH | Benzo(a)anthracene | 11 U | 5.3 | 11 | | µg/kg | | NC |
| SS | BVBS1284 | BVBS1284D001 | FD | 14 Jul 2014 | 1 - 2 | SW8270C-SIM | PAH | Benzo(a)pyrene | 11 U | 5.3 | 11 | | µg/kg | | NC |
| SS | BVBS1284 | BVBS1284D001 | FD | 14 Jul 2014 | 1 - 2 | SW8270C-SIM | PAH | Benzo(b)fluoranthene | 11 U | 5.3 | 11 | | µg/kg | | NC |
| SS | BVBS1284 | BVBS1284D001 | FD | 14 Jul 2014 | 1 - 2 | SW8270C-SIM | PAH | Benzo(ghi)perylene | 11 U | 5.3 | 11 | 2.5 | µg/kg | X | RL |
| SS | BVBS1284 | BVBS1284D001 | FD | 14 Jul 2014 | 1 - 2 | SW8270C-SIM | PAH | Benzo(k)fluoranthene | 11 U | 5.3 | 11 | | µg/kg | | NC |
| SS | BVBS1284 | BVBS1284D001 | FD | 14 Jul 2014 | 1 - 2 | SW8270C-SIM | PAH | Chrysene | 11 U | 5.3 | 11 | | µg/kg | | NC |
| SS | BVBS1284 | BVBS1284D001 | FD | 14 Jul 2014 | 1 - 2 | SW8270C-SIM | PAH | Dibenzo(a,h)anthracene | 11 U | 5.3 | 11 | | µg/kg | | NC |
| SS | BVBS1284 | BVBS1284D001 | FD | 14 Jul 2014 | 1 - 2 | SW8270C-SIM | PAH | Fluoranthene | 11 U | 5.3 | 11 | 5.2 | µg/kg | X | RL |
| SS | BVBS1284 | BVBS1284D001 | FD | 14 Jul 2014 | 1 - 2 | SW8270C-SIM | PAH | Fluorene | 11 U | 5.3 | 11 | 3.8 | µg/kg | X | RL |
| SS | BVBS1284 | BVBS1284D001 | FD | 14 Jul 2014 | 1 - 2 | SW8270C-SIM | PAH | Indeno(1,2,3-cd)pyrene | 11 U | 5.3 | 11 | | µg/kg | | NC |
| SS | BVBS1284 | BVBS1284D001 | FD | 14 Jul 2014 | 1 - 2 | SW8270C-SIM | PAH | Naphthalene | 11 U | 5.3 | 11 | 3.6 | µg/kg | X | RL |
| SS | BVBS1284 | BVBS1284D001 | FD | 14 Jul 2014 | 1 - 2 | SW8270C-SIM | PAH | PAHTEQM | 0 U | | | 4.47 | µg/kg | | N |
| SS | BVBS1284 | BVBS1284D001 | FD | 14 Jul 2014 | 1 - 2 | SW8270C-SIM | PAH | Phenanthrene | 11 U | 5.3 | 11 | 3.9 | µg/kg | X | RL |
| SS | BVBS1284 | BVBS1284D001 | FD | 14 Jul 2014 | 1 - 2 | SW8270C-SIM | PAH | Pyrene | 11 U | 5.3 | 11 | 5.6 | µg/kg | X | N |
| SS | BVBS1284 | BVBS1284D001 | FD | 14 Jul 2014 | 1 - 2 | SW8270C-SIM | PHTH | Bis(2-ethylhexyl)phthalate | 21 U | 11 | 21 | 61 | µg/kg | | N |
| SS | BVBS1284 | BVBS1284D001 | FD | 14 Jul 2014 | 1 - 2 | SW8270C-SIM | PHTH | Butyl benzyl phthalate | 21 U | 11 | 21 | 100 | µg/kg | | N |
| SS | BVBS1284 | BVBS1284D001 | FD | 14 Jul 2014 | 1 - 2 | SW8270C-SIM | PHTH | Diethyl phthalate | 21 U | 11 | 21 | 27 | µg/kg | | N |
| SS | BVBS1284 | BVBS1284D001 | FD | 14 Jul 2014 | 1 - 2 | SW8270C-SIM | PHTH | Dimethyl phthalate | 21 U | 11 | 21 | 27 | µg/kg | | N |
| SS | BVBS1284 | BVBS1284D001 | FD | 14 Jul 2014 | 1 - 2 | SW8270C-SIM | PHTH | Di-n-butyl phthalate | 21 U | 11 | 21 | 27 | µg/kg | | N |
| SS | BVBS1284 | BVBS1284D001 | FD | 14 Jul 2014 | 1 - 2 | SW8270C-SIM | PHTH | Di-n-octyl phthalate | 21 U | 11 | 21 | 27 | µg/kg | | N |

APPENDIX D-1

**Test Stand Biovent Analytical Data**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | FSP SL | Units | FSP Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SS | BVBS1284 | BVBS1284D001 | FD | 14 Jul 2014 | 1 - 2 | SW8260B | SVOC | Diisopropyl ether | 1.1 U | 1.1 | 11 | 10 | µg/kg | | N |
| SS | BVBS1284 | BVBS1284D001 | FD | 14 Jul 2014 | 1 - 2 | SW8270C-SIM | SVOC | n-Nitrosodimethylamine | 21 U | 11 | 21 | 10 | µg/kg | X | RL |
| SS | BVBS1284 | BVBS1284D001 | FD | 14 Jul 2014 | 1 - 2 | SW8260B | SVOC | tert-Amyl methyl ether | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SS | BVBS1284 | BVBS1284D001 | FD | 14 Jul 2014 | 1 - 2 | SW8260B | SVOC | tert-Butyl alcohol | 11 U | 11 | 55 | 50 | µg/kg | | N |
| SS | BVBS1284 | BVBS1284D001 | FD | 14 Jul 2014 | 1 - 2 | SW8260B | SVOC | tert-Butyl ethyl ether | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SS | BVBS1284 | BVBS1284D001 | FD | 14 Jul 2014 | 1 - 2 | SW8260B | VOC | 1,1,1,2-Tetrachloroethane | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SS | BVBS1284 | BVBS1284D001 | FD | 14 Jul 2014 | 1 - 2 | SW8260B | VOC | 1,1,1-Trichloroethane | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SS | BVBS1284 | BVBS1284D001 | FD | 14 Jul 2014 | 1 - 2 | SW8260B | VOC | 1,1,2,2-Tetrachloroethane | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SS | BVBS1284 | BVBS1284D001 | FD | 14 Jul 2014 | 1 - 2 | SW8260B | VOC | 1,1,2-Trichloro-1,2,2-trifluoroethane | 2.2 U | 2.2 | 5.5 | 5 | µg/kg | | N |
| SS | BVBS1284 | BVBS1284D001 | FD | 14 Jul 2014 | 1 - 2 | SW8260B | VOC | 1,1,2-Trichloroethane | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SS | BVBS1284 | BVBS1284D001 | FD | 14 Jul 2014 | 1 - 2 | SW8260B | VOC | 1,1-Dichloroethane | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SS | BVBS1284 | BVBS1284D001 | FD | 14 Jul 2014 | 1 - 2 | SW8260B | VOC | 1,1-Dichloroethene | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SS | BVBS1284 | BVBS1284D001 | FD | 14 Jul 2014 | 1 - 2 | SW8260B | VOC | 1,1-Dichloropropene | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SS | BVBS1284 | BVBS1284D001 | FD | 14 Jul 2014 | 1 - 2 | SW8260B | VOC | 1,2,3-Trichlorobenzene | 2.2 U | 2.2 | 5.5 | 5 | µg/kg | | N |
| SS | BVBS1284 | BVBS1284D001 | FD | 14 Jul 2014 | 1 - 2 | SW8260B | VOC | 1,2,3-Trichloropropane | 2.2 U | 2.2 | 5.5 | 5 | µg/kg | | N |
| SS | BVBS1284 | BVBS1284D001 | FD | 14 Jul 2014 | 1 - 2 | SW8260B | VOC | 1,2,4-Trichlorobenzene | 2.2 U | 2.2 | 5.5 | 5 | µg/kg | | N |
| SS | BVBS1284 | BVBS1284D001 | FD | 14 Jul 2014 | 1 - 2 | SW8260B | VOC | 1,2,4-Trimethylbenzene | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SS | BVBS1284 | BVBS1284D001 | FD | 14 Jul 2014 | 1 - 2 | SW8260B | VOC | 1,2-Dibromo-3-chloropropane | 2.2 U | 2.2 | 11 | 10 | µg/kg | | N |
| SS | BVBS1284 | BVBS1284D001 | FD | 14 Jul 2014 | 1 - 2 | SW8260B | VOC | 1,2-Dibromoethane (EDB) | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SS | BVBS1284 | BVBS1284D001 | FD | 14 Jul 2014 | 1 - 2 | SW8260B | VOC | 1,2-Dichlorobenzene | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SS | BVBS1284 | BVBS1284D001 | FD | 14 Jul 2014 | 1 - 2 | SW8260B | VOC | 1,2-Dichloroethane | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SS | BVBS1284 | BVBS1284D001 | FD | 14 Jul 2014 | 1 - 2 | SW8260B | VOC | 1,2-Dichloropropane | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SS | BVBS1284 | BVBS1284D001 | FD | 14 Jul 2014 | 1 - 2 | SW8260B | VOC | 1,3,5-Trimethylbenzene | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SS | BVBS1284 | BVBS1284D001 | FD | 14 Jul 2014 | 1 - 2 | SW8260B | VOC | 1,3-Dichlorobenzene | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SS | BVBS1284 | BVBS1284D001 | FD | 14 Jul 2014 | 1 - 2 | SW8260B | VOC | 1,3-Dichloropropane | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SS | BVBS1284 | BVBS1284D001 | FD | 14 Jul 2014 | 1 - 2 | SW8260B | VOC | 1,4-Dichlorobenzene | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SS | BVBS1284 | BVBS1284D001 | FD | 14 Jul 2014 | 1 - 2 | SW8260B | VOC | 2,2-Dichloropropane | 2.2 U | 2.2 | 5.5 | 5 | µg/kg | | N |
| SS | BVBS1284 | BVBS1284D001 | FD | 14 Jul 2014 | 1 - 2 | SW8260B | VOC | 2-Butanone (MEK) | 5.5 U | 5.5 | 22 | 20 | µg/kg | | N |
| SS | BVBS1284 | BVBS1284D001 | FD | 14 Jul 2014 | 1 - 2 | SW8260B | VOC | 2-Chloro-1,1,1-trifluoroethane | 2.2 U | 2.2 | 11 | 10 | µg/kg | | N |
| SS | BVBS1284 | BVBS1284D001 | FD | 14 Jul 2014 | 1 - 2 | SW8260B | VOC | 2-Chloroethyl vinyl ether | 2.2 U | 2.2 | 11 | 10 | µg/kg | | N |
| SS | BVBS1284 | BVBS1284D001 | FD | 14 Jul 2014 | 1 - 2 | SW8260B | VOC | 2-Chlorotoluene | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SS | BVBS1284 | BVBS1284D001 | FD | 14 Jul 2014 | 1 - 2 | SW8260B | VOC | 2-Hexanone | 5.5 U | 5.5 | 11 | 10 | µg/kg | | N |
| SS | BVBS1284 | BVBS1284D001 | FD | 14 Jul 2014 | 1 - 2 | SW8260B | VOC | 4-Chlorotoluene | 1.1 U | 1.1 | 11 | 10 | µg/kg | | N |
| SS | BVBS1284 | BVBS1284D001 | FD | 14 Jul 2014 | 1 - 2 | SW8260B | VOC | 4-Methyl-2-pentanone (MIBK) | 5.5 U | 5.5 | 11 | 10 | µg/kg | | N |
| SS | BVBS1284 | BVBS1284D001 | FD | 14 Jul 2014 | 1 - 2 | SW8260B | VOC | Acetone | 5.5 U | 5.5 | 22 | 20 | µg/kg | | N |
| SS | BVBS1284 | BVBS1284D001 | FD | 14 Jul 2014 | 1 - 2 | SW8260B | VOC | Benzene | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SS | BVBS1284 | BVBS1284D001 | FD | 14 Jul 2014 | 1 - 2 | SW8260B | VOC | Bromobenzene | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SS | BVBS1284 | BVBS1284D001 | FD | 14 Jul 2014 | 1 - 2 | SW8260B | VOC | Bromochloromethane | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |

APPENDIX D-1

**Test Stand Biovent Analytical Data**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | FSP SL | Units | FSP Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SS | BVBS1284 | BVBS1284D001 | FD | 14 Jul 2014 | 1 - 2 | SW8260B | VOC | Bromodichloromethane | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SS | BVBS1284 | BVBS1284D001 | FD | 14 Jul 2014 | 1 - 2 | SW8260B | VOC | Bromoform | 2.2 U | 2.2 | 5.5 | 5 | µg/kg | | N |
| SS | BVBS1284 | BVBS1284D001 | FD | 14 Jul 2014 | 1 - 2 | SW8260B | VOC | Bromomethane | 2.2 U | 2.2 | 5.5 | 5 | µg/kg | | N |
| SS | BVBS1284 | BVBS1284D001 | FD | 14 Jul 2014 | 1 - 2 | SW8260B | VOC | Carbon tetrachloride | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SS | BVBS1284 | BVBS1284D001 | FD | 14 Jul 2014 | 1 - 2 | SW8260B | VOC | Chlorobenzene | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SS | BVBS1284 | BVBS1284D001 | FD | 14 Jul 2014 | 1 - 2 | SW8260B | VOC | Chloroethane | 2.2 U | 2.2 | 5.5 | 5 | µg/kg | | N |
| SS | BVBS1284 | BVBS1284D001 | FD | 14 Jul 2014 | 1 - 2 | SW8260B | VOC | Chloromethane | 2.2 U | 2.2 | 5.5 | 5 | µg/kg | | N |
| SS | BVBS1284 | BVBS1284D001 | FD | 14 Jul 2014 | 1 - 2 | SW8260B | VOC | Chlorotrifluoroethylene | 2.2 U | 2.2 | 11 | 10 | µg/kg | | N |
| SS | BVBS1284 | BVBS1284D001 | FD | 14 Jul 2014 | 1 - 2 | SW8260B | VOC | cis-1,2-Dichloroethene | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SS | BVBS1284 | BVBS1284D001 | FD | 14 Jul 2014 | 1 - 2 | SW8260B | VOC | cis-1,3-Dichloropropene | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SS | BVBS1284 | BVBS1284D001 | FD | 14 Jul 2014 | 1 - 2 | SW8260B | VOC | Dibromochloromethane | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SS | BVBS1284 | BVBS1284D001 | FD | 14 Jul 2014 | 1 - 2 | SW8260B | VOC | Dibromomethane | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SS | BVBS1284 | BVBS1284D001 | FD | 14 Jul 2014 | 1 - 2 | SW8260B | VOC | Dichlorodifluoromethane | 2.2 U | 2.2 | 5.5 | 5 | µg/kg | | N |
| SS | BVBS1284 | BVBS1284D001 | FD | 14 Jul 2014 | 1 - 2 | SW8260B | VOC | Ethylbenzene | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SS | BVBS1284 | BVBS1284D001 | FD | 14 Jul 2014 | 1 - 2 | SW8260B | VOC | Hexachlorobutadiene | 2.2 U | 2.2 | 5.5 | 5 | µg/kg | | N |
| SS | BVBS1284 | BVBS1284D001 | FD | 14 Jul 2014 | 1 - 2 | SW8260B | VOC | Isopropylbenzene | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SS | BVBS1284 | BVBS1284D001 | FD | 14 Jul 2014 | 1 - 2 | SW8260B | VOC | m,p-Xylenes | 2.2 U | 2.2 | 5.5 | 5 | µg/kg | | N |
| SS | BVBS1284 | BVBS1284D001 | FD | 14 Jul 2014 | 1 - 2 | SW8260B | VOC | Methylene chloride | 2.2 U | 2.2 | 11 | 10 | µg/kg | | N |
| SS | BVBS1284 | BVBS1284D001 | FD | 14 Jul 2014 | 1 - 2 | SW8260B | VOC | Methyl-tert-butyl Ether (MTBE) | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SS | BVBS1284 | BVBS1284D001 | FD | 14 Jul 2014 | 1 - 2 | SW8260B | VOC | n-butylbenzene | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SS | BVBS1284 | BVBS1284D001 | FD | 14 Jul 2014 | 1 - 2 | SW8260B | VOC | n-Propylbenzene | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SS | BVBS1284 | BVBS1284D001 | FD | 14 Jul 2014 | 1 - 2 | SW8260B | VOC | o-Xylene | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SS | BVBS1284 | BVBS1284D001 | FD | 14 Jul 2014 | 1 - 2 | SW8260B | VOC | p-Isopropyltoluene | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SS | BVBS1284 | BVBS1284D001 | FD | 14 Jul 2014 | 1 - 2 | SW8260B | VOC | sec-Butylbenzene | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SS | BVBS1284 | BVBS1284D001 | FD | 14 Jul 2014 | 1 - 2 | SW8260B | VOC | Styrene | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SS | BVBS1284 | BVBS1284D001 | FD | 14 Jul 2014 | 1 - 2 | SW8260B | VOC | tert-Butylbenzene | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SS | BVBS1284 | BVBS1284D001 | FD | 14 Jul 2014 | 1 - 2 | SW8260B | VOC | Tetrachloroethene | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SS | BVBS1284 | BVBS1284D001 | FD | 14 Jul 2014 | 1 - 2 | SW8260B | VOC | Toluene | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SS | BVBS1284 | BVBS1284D001 | FD | 14 Jul 2014 | 1 - 2 | SW8260B | VOC | trans-1,2-Dichloroethene | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SS | BVBS1284 | BVBS1284D001 | FD | 14 Jul 2014 | 1 - 2 | SW8260B | VOC | trans-1,3-Dichloropropene | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SS | BVBS1284 | BVBS1284D001 | FD | 14 Jul 2014 | 1 - 2 | SW8260B | VOC | Trichloroethene | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SS | BVBS1284 | BVBS1284D001 | FD | 14 Jul 2014 | 1 - 2 | SW8260B | VOC | Trichlorofluoromethane | 2.2 U | 2.2 | 5.5 | 5 | µg/kg | | N |
| SS | BVBS1284 | BVBS1284D001 | FD | 14 Jul 2014 | 1 - 2 | SW8260B | VOC | Trichloromethane (Chloroform) | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SS | BVBS1284 | BVBS1284D001 | FD | 14 Jul 2014 | 1 - 2 | SW8260B | VOC | Vinyl chloride | 2.2 U | 2.2 | 5.5 | 5 | µg/kg | | N |
| SS | BVBS1284 | BVBS1284S001 | N | 14 Jul 2014 | 1 - 2 | SW9045D | GENCHEM | pH | 7.52 = | | | | PH UNITS | | NC |
| SS | BVBS1284 | BVBS1284S001 | N | 14 Jul 2014 | 1 - 2 | Walkley-Black | GENCHEM | Total Organic Carbon | 611 U | 611 | 611 | | mg/kg | | NC |
| SS | BVBS1284 | BVBS1284S001 | N | 14 Jul 2014 | 1 - 2 | M8015D | HC | Diesel Range Organics (C12-C14) | 5300 U | 2700 | 5300 | 5000 | µg/kg | X | N |
| SS | BVBS1284 | BVBS1284S001 | N | 14 Jul 2014 | 1 - 2 | M8015D | HC | Diesel Range Organics (C15-C20) | 5300 U | 2700 | 5300 | 5000 | µg/kg | X | N |

APPENDIX D-1

**Test Stand Biovent Analytical Data**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | FSP SL | Units | FSP Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SS | BVBS1284 | BVBS1284S001 | N | 14 Jul 2014 | 1 - 2 | M8015D | HC | Diesel Range Organics (C21-C30) | 5300 U | 2700 | 5300 | 5000 | µg/kg | X | N |
| SS | BVBS1284 | BVBS1284S001 | N | 14 Jul 2014 | 1 - 2 | M8015D | HC | Diesel Range Organics (C8-C11) | 5300 U | 2700 | 5300 | 1000 | µg/kg | X | RL |
| SS | BVBS1284 | BVBS1284S001 | N | 14 Jul 2014 | 1 - 2 | SW8015B | HC | GRO (C6-C12) | 920 U | 460 | 920 | 1000 | µg/kg | | N |
| SS | BVBS1284 | BVBS1284S001 | N | 14 Jul 2014 | 1 - 2 | M8015D | HC | ORO (C31-C40) | 11000 U | 5300 | 11000 | 10000 | µg/kg | X | N |
| SS | BVBS1284 | BVBS1284S001 | N | 14 Jul 2014 | 1 - 2 | M8015D | HC | TOTAL EFH(C8-C40) | 5300 U | 2700 | 5300 | 10000 | µg/kg | | N |
| SS | BVBS1284 | BVBS1284S001 | N | 14 Jul 2014 | 1 - 2 | SW8270C-SIM | PAH | 1-Methylnaphthalene | 11 U | 5.3 | 11 | 2.5 | µg/kg | X | RL |
| SS | BVBS1284 | BVBS1284S001 | N | 14 Jul 2014 | 1 - 2 | SW8270C-SIM | PAH | 2-Methylnaphthalene | 11 U | 5.3 | 11 | 2.5 | µg/kg | X | RL |
| SS | BVBS1284 | BVBS1284S001 | N | 14 Jul 2014 | 1 - 2 | SW8270C-SIM | PAH | Acenaphthene | 11 U | 5.3 | 11 | 2.5 | µg/kg | X | RL |
| SS | BVBS1284 | BVBS1284S001 | N | 14 Jul 2014 | 1 - 2 | SW8270C-SIM | PAH | Acenaphthylene | 11 U | 5.3 | 11 | 2.5 | µg/kg | X | RL |
| SS | BVBS1284 | BVBS1284S001 | N | 14 Jul 2014 | 1 - 2 | SW8270C-SIM | PAH | Anthracene | 11 U | 5.3 | 11 | 2.5 | µg/kg | X | RL |
| SS | BVBS1284 | BVBS1284S001 | N | 14 Jul 2014 | 1 - 2 | SW8270C-SIM | PAH | Benzo(a)anthracene | 11 U | 5.3 | 11 | | µg/kg | | NC |
| SS | BVBS1284 | BVBS1284S001 | N | 14 Jul 2014 | 1 - 2 | SW8270C-SIM | PAH | Benzo(a)pyrene | 11 U | 5.3 | 11 | | µg/kg | | NC |
| SS | BVBS1284 | BVBS1284S001 | N | 14 Jul 2014 | 1 - 2 | SW8270C-SIM | PAH | Benzo(b)fluoranthene | 11 U | 5.3 | 11 | | µg/kg | | NC |
| SS | BVBS1284 | BVBS1284S001 | N | 14 Jul 2014 | 1 - 2 | SW8270C-SIM | PAH | Benzo(ghi)perylene | 11 U | 5.3 | 11 | 2.5 | µg/kg | X | RL |
| SS | BVBS1284 | BVBS1284S001 | N | 14 Jul 2014 | 1 - 2 | SW8270C-SIM | PAH | Benzo(k)fluoranthene | 11 U | 5.3 | 11 | | µg/kg | | NC |
| SS | BVBS1284 | BVBS1284S001 | N | 14 Jul 2014 | 1 - 2 | SW8270C-SIM | PAH | Chrysene | 11 U | 5.3 | 11 | | µg/kg | | NC |
| SS | BVBS1284 | BVBS1284S001 | N | 14 Jul 2014 | 1 - 2 | SW8270C-SIM | PAH | Dibenzo(a,h)anthracene | 11 U | 5.3 | 11 | | µg/kg | | NC |
| SS | BVBS1284 | BVBS1284S001 | N | 14 Jul 2014 | 1 - 2 | SW8270C-SIM | PAH | Fluoranthene | 11 U | 5.3 | 11 | 5.2 | µg/kg | X | RL |
| SS | BVBS1284 | BVBS1284S001 | N | 14 Jul 2014 | 1 - 2 | SW8270C-SIM | PAH | Fluorene | 11 U | 5.3 | 11 | 3.8 | µg/kg | X | RL |
| SS | BVBS1284 | BVBS1284S001 | N | 14 Jul 2014 | 1 - 2 | SW8270C-SIM | PAH | Indeno(1,2,3-cd)pyrene | 11 U | 5.3 | 11 | | µg/kg | | NC |
| SS | BVBS1284 | BVBS1284S001 | N | 14 Jul 2014 | 1 - 2 | SW8270C-SIM | PAH | Naphthalene | 11 U | 5.3 | 11 | 3.6 | µg/kg | X | RL |
| SS | BVBS1284 | BVBS1284S001 | N | 14 Jul 2014 | 1 - 2 | SW8270C-SIM | PAH | PAHTEQM | 0 U | | | 4.47 | µg/kg | | N |
| SS | BVBS1284 | BVBS1284S001 | N | 14 Jul 2014 | 1 - 2 | SW8270C-SIM | PAH | Phenanthrene | 11 U | 5.3 | 11 | 3.9 | µg/kg | X | RL |
| SS | BVBS1284 | BVBS1284S001 | N | 14 Jul 2014 | 1 - 2 | SW8270C-SIM | PAH | Pyrene | 11 U | 5.3 | 11 | 5.6 | µg/kg | X | N |
| SS | BVBS1284 | BVBS1284S001 | N | 14 Jul 2014 | 1 - 2 | SW8270C-SIM | PHTH | Bis(2-ethylhexyl)phthalate | 21 U | 11 | 21 | 61 | µg/kg | | N |
| SS | BVBS1284 | BVBS1284S001 | N | 14 Jul 2014 | 1 - 2 | SW8270C-SIM | PHTH | Butyl benzyl phthalate | 21 U | 11 | 21 | 100 | µg/kg | | N |
| SS | BVBS1284 | BVBS1284S001 | N | 14 Jul 2014 | 1 - 2 | SW8270C-SIM | PHTH | Diethyl phthalate | 21 U | 11 | 21 | 27 | µg/kg | | N |
| SS | BVBS1284 | BVBS1284S001 | N | 14 Jul 2014 | 1 - 2 | SW8270C-SIM | PHTH | Dimethyl phthalate | 21 U | 11 | 21 | 27 | µg/kg | | N |
| SS | BVBS1284 | BVBS1284S001 | N | 14 Jul 2014 | 1 - 2 | SW8270C-SIM | PHTH | Di-n-butyl phthalate | 21 U | 11 | 21 | 27 | µg/kg | | N |
| SS | BVBS1284 | BVBS1284S001 | N | 14 Jul 2014 | 1 - 2 | SW8270C-SIM | PHTH | Di-n-octyl phthalate | 21 U | 11 | 21 | 27 | µg/kg | | N |
| SS | BVBS1284 | BVBS1284S001 | N | 14 Jul 2014 | 1 - 2 | SW8260B | SVOC | Diisopropyl ether | 0.9 U | 0.9 | 9 | 10 | µg/kg | | N |
| SS | BVBS1284 | BVBS1284S001 | N | 14 Jul 2014 | 1 - 2 | SW8270C-SIM | SVOC | n-Nitrosodimethylamine | 21 U | 11 | 21 | 10 | µg/kg | X | RL |
| SS | BVBS1284 | BVBS1284S001 | N | 14 Jul 2014 | 1 - 2 | SW8260B | SVOC | tert-Amyl methyl ether | 0.9 U | 0.9 | 4.5 | 5 | µg/kg | | N |
| SS | BVBS1284 | BVBS1284S001 | N | 14 Jul 2014 | 1 - 2 | SW8260B | SVOC | tert-Butyl alcohol | 9 U | 9 | 45 | 50 | µg/kg | | N |
| SS | BVBS1284 | BVBS1284S001 | N | 14 Jul 2014 | 1 - 2 | SW8260B | SVOC | tert-Butyl ethyl ether | 0.9 U | 0.9 | 4.5 | 5 | µg/kg | | N |
| SS | BVBS1284 | BVBS1284S001 | N | 14 Jul 2014 | 1 - 2 | SW8260B | VOC | 1,1,1,2-Tetrachloroethane | 0.9 U | 0.9 | 4.5 | 5 | µg/kg | | N |
| SS | BVBS1284 | BVBS1284S001 | N | 14 Jul 2014 | 1 - 2 | SW8260B | VOC | 1,1,1-Trichloroethane | 0.9 U | 0.9 | 4.5 | 5 | µg/kg | | N |
| SS | BVBS1284 | BVBS1284S001 | N | 14 Jul 2014 | 1 - 2 | SW8260B | VOC | 1,1,2,2-Tetrachloroethane | 0.9 U | 0.9 | 4.5 | 5 | µg/kg | | N |

APPENDIX D-1

**Test Stand Biovent Analytical Data**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | FSP SL | Units | FSP Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SS | BVBS1284 | BVBS1284S001 | N | 14 Jul 2014 | 1 - 2 | SW8260B | VOC | 1,1,2-Trichloro-1,2,2-trifluoroethane | 1.8 U | 1.8 | 4.5 | 5 | µg/kg | | N |
| SS | BVBS1284 | BVBS1284S001 | N | 14 Jul 2014 | 1 - 2 | SW8260B | VOC | 1,1,2-Trichloroethane | 0.9 U | 0.9 | 4.5 | 5 | µg/kg | | N |
| SS | BVBS1284 | BVBS1284S001 | N | 14 Jul 2014 | 1 - 2 | SW8260B | VOC | 1,1-Dichloroethane | 0.9 U | 0.9 | 4.5 | 5 | µg/kg | | N |
| SS | BVBS1284 | BVBS1284S001 | N | 14 Jul 2014 | 1 - 2 | SW8260B | VOC | 1,1-Dichloroethene | 0.9 U | 0.9 | 4.5 | 5 | µg/kg | | N |
| SS | BVBS1284 | BVBS1284S001 | N | 14 Jul 2014 | 1 - 2 | SW8260B | VOC | 1,1-Dichloropropene | 0.9 U | 0.9 | 4.5 | 5 | µg/kg | | N |
| SS | BVBS1284 | BVBS1284S001 | N | 14 Jul 2014 | 1 - 2 | SW8260B | VOC | 1,2,3-Trichlorobenzene | 1.8 U | 1.8 | 4.5 | 5 | µg/kg | | N |
| SS | BVBS1284 | BVBS1284S001 | N | 14 Jul 2014 | 1 - 2 | SW8260B | VOC | 1,2,3-Trichloropropane | 1.8 U | 1.8 | 4.5 | 5 | µg/kg | | N |
| SS | BVBS1284 | BVBS1284S001 | N | 14 Jul 2014 | 1 - 2 | SW8260B | VOC | 1,2,4-Trichlorobenzene | 1.8 U | 1.8 | 4.5 | 5 | µg/kg | | N |
| SS | BVBS1284 | BVBS1284S001 | N | 14 Jul 2014 | 1 - 2 | SW8260B | VOC | 1,2,4-Trimethylbenzene | 0.9 U | 0.9 | 4.5 | 5 | µg/kg | | N |
| SS | BVBS1284 | BVBS1284S001 | N | 14 Jul 2014 | 1 - 2 | SW8260B | VOC | 1,2-Dibromo-3-chloropropane | 1.8 U | 1.8 | 9 | 10 | µg/kg | | N |
| SS | BVBS1284 | BVBS1284S001 | N | 14 Jul 2014 | 1 - 2 | SW8260B | VOC | 1,2-Dibromoethane (EDB) | 0.9 U | 0.9 | 4.5 | 5 | µg/kg | | N |
| SS | BVBS1284 | BVBS1284S001 | N | 14 Jul 2014 | 1 - 2 | SW8260B | VOC | 1,2-Dichlorobenzene | 0.9 U | 0.9 | 4.5 | 5 | µg/kg | | N |
| SS | BVBS1284 | BVBS1284S001 | N | 14 Jul 2014 | 1 - 2 | SW8260B | VOC | 1,2-Dichloroethane | 0.9 U | 0.9 | 4.5 | 5 | µg/kg | | N |
| SS | BVBS1284 | BVBS1284S001 | N | 14 Jul 2014 | 1 - 2 | SW8260B | VOC | 1,2-Dichloropropane | 0.9 U | 0.9 | 4.5 | 5 | µg/kg | | N |
| SS | BVBS1284 | BVBS1284S001 | N | 14 Jul 2014 | 1 - 2 | SW8260B | VOC | 1,3,5-Trimethylbenzene | 0.9 U | 0.9 | 4.5 | 5 | µg/kg | | N |
| SS | BVBS1284 | BVBS1284S001 | N | 14 Jul 2014 | 1 - 2 | SW8260B | VOC | 1,3-Dichlorobenzene | 0.9 U | 0.9 | 4.5 | 5 | µg/kg | | N |
| SS | BVBS1284 | BVBS1284S001 | N | 14 Jul 2014 | 1 - 2 | SW8260B | VOC | 1,3-Dichloropropane | 0.9 U | 0.9 | 4.5 | 5 | µg/kg | | N |
| SS | BVBS1284 | BVBS1284S001 | N | 14 Jul 2014 | 1 - 2 | SW8260B | VOC | 1,4-Dichlorobenzene | 0.9 U | 0.9 | 4.5 | 5 | µg/kg | | N |
| SS | BVBS1284 | BVBS1284S001 | N | 14 Jul 2014 | 1 - 2 | SW8260B | VOC | 2,2-Dichloropropane | 1.8 U | 1.8 | 4.5 | 5 | µg/kg | | N |
| SS | BVBS1284 | BVBS1284S001 | N | 14 Jul 2014 | 1 - 2 | SW8260B | VOC | 2-Butanone (MEK) | 4.5 U | 4.5 | 18 | 20 | µg/kg | | N |
| SS | BVBS1284 | BVBS1284S001 | N | 14 Jul 2014 | 1 - 2 | SW8260B | VOC | 2-Chloro-1,1,1-trifluoroethane | 1.8 U | 1.8 | 9 | 10 | µg/kg | | N |
| SS | BVBS1284 | BVBS1284S001 | N | 14 Jul 2014 | 1 - 2 | SW8260B | VOC | 2-Chloroethyl vinyl ether | 1.8 U | 1.8 | 9 | 10 | µg/kg | | N |
| SS | BVBS1284 | BVBS1284S001 | N | 14 Jul 2014 | 1 - 2 | SW8260B | VOC | 2-Chlorotoluene | 0.9 U | 0.9 | 4.5 | 5 | µg/kg | | N |
| SS | BVBS1284 | BVBS1284S001 | N | 14 Jul 2014 | 1 - 2 | SW8260B | VOC | 2-Hexanone | 4.5 U | 4.5 | 9 | 10 | µg/kg | | N |
| SS | BVBS1284 | BVBS1284S001 | N | 14 Jul 2014 | 1 - 2 | SW8260B | VOC | 4-Chlorotoluene | 0.9 U | 0.9 | 9 | 10 | µg/kg | | N |
| SS | BVBS1284 | BVBS1284S001 | N | 14 Jul 2014 | 1 - 2 | SW8260B | VOC | 4-Methyl-2-pentanone (MIBK) | 4.5 U | 4.5 | 9 | 10 | µg/kg | | N |
| SS | BVBS1284 | BVBS1284S001 | N | 14 Jul 2014 | 1 - 2 | SW8260B | VOC | Acetone | 4.5 U | 4.5 | 18 | 20 | µg/kg | | N |
| SS | BVBS1284 | BVBS1284S001 | N | 14 Jul 2014 | 1 - 2 | SW8260B | VOC | Benzene | 0.9 U | 0.9 | 4.5 | 5 | µg/kg | | N |
| SS | BVBS1284 | BVBS1284S001 | N | 14 Jul 2014 | 1 - 2 | SW8260B | VOC | Bromobenzene | 0.9 U | 0.9 | 4.5 | 5 | µg/kg | | N |
| SS | BVBS1284 | BVBS1284S001 | N | 14 Jul 2014 | 1 - 2 | SW8260B | VOC | Bromochloromethane | 0.9 U | 0.9 | 4.5 | 5 | µg/kg | | N |
| SS | BVBS1284 | BVBS1284S001 | N | 14 Jul 2014 | 1 - 2 | SW8260B | VOC | Bromodichloromethane | 0.9 U | 0.9 | 4.5 | 5 | µg/kg | | N |
| SS | BVBS1284 | BVBS1284S001 | N | 14 Jul 2014 | 1 - 2 | SW8260B | VOC | Bromoform | 1.8 U | 1.8 | 4.5 | 5 | µg/kg | | N |
| SS | BVBS1284 | BVBS1284S001 | N | 14 Jul 2014 | 1 - 2 | SW8260B | VOC | Bromomethane | 1.8 U | 1.8 | 4.5 | 5 | µg/kg | | N |
| SS | BVBS1284 | BVBS1284S001 | N | 14 Jul 2014 | 1 - 2 | SW8260B | VOC | Carbon tetrachloride | 0.9 U | 0.9 | 4.5 | 5 | µg/kg | | N |
| SS | BVBS1284 | BVBS1284S001 | N | 14 Jul 2014 | 1 - 2 | SW8260B | VOC | Chlorobenzene | 0.9 U | 0.9 | 4.5 | 5 | µg/kg | | N |
| SS | BVBS1284 | BVBS1284S001 | N | 14 Jul 2014 | 1 - 2 | SW8260B | VOC | Chloroethane | 1.8 U | 1.8 | 4.5 | 5 | µg/kg | | N |
| SS | BVBS1284 | BVBS1284S001 | N | 14 Jul 2014 | 1 - 2 | SW8260B | VOC | Chloromethane | 1.8 U | 1.8 | 4.5 | 5 | µg/kg | | N |
| SS | BVBS1284 | BVBS1284S001 | N | 14 Jul 2014 | 1 - 2 | SW8260B | VOC | Chlorotrifluoroethylene | 1.8 U | 1.8 | 9 | 10 | µg/kg | | N |

APPENDIX D-1

**Test Stand Biovent Analytical Data**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | FSP SL | Units | FSP Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SS | BVBS1284 | BVBS1284S001 | N | 14 Jul 2014 | 1 - 2 | SW8260B | VOC | cis-1,2-Dichloroethene | 0.9 U | 0.9 | 4.5 | 5 | µg/kg | | N |
| SS | BVBS1284 | BVBS1284S001 | N | 14 Jul 2014 | 1 - 2 | SW8260B | VOC | cis-1,3-Dichloropropene | 0.9 U | 0.9 | 4.5 | 5 | µg/kg | | N |
| SS | BVBS1284 | BVBS1284S001 | N | 14 Jul 2014 | 1 - 2 | SW8260B | VOC | Dibromochloromethane | 0.9 U | 0.9 | 4.5 | 5 | µg/kg | | N |
| SS | BVBS1284 | BVBS1284S001 | N | 14 Jul 2014 | 1 - 2 | SW8260B | VOC | Dibromomethane | 0.9 U | 0.9 | 4.5 | 5 | µg/kg | | N |
| SS | BVBS1284 | BVBS1284S001 | N | 14 Jul 2014 | 1 - 2 | SW8260B | VOC | Dichlorodifluoromethane | 1.8 U | 1.8 | 4.5 | 5 | µg/kg | | N |
| SS | BVBS1284 | BVBS1284S001 | N | 14 Jul 2014 | 1 - 2 | SW8260B | VOC | Ethylbenzene | 0.9 U | 0.9 | 4.5 | 5 | µg/kg | | N |
| SS | BVBS1284 | BVBS1284S001 | N | 14 Jul 2014 | 1 - 2 | SW8260B | VOC | Hexachlorobutadiene | 1.8 U | 1.8 | 4.5 | 5 | µg/kg | | N |
| SS | BVBS1284 | BVBS1284S001 | N | 14 Jul 2014 | 1 - 2 | SW8260B | VOC | Isopropylbenzene | 0.9 U | 0.9 | 4.5 | 5 | µg/kg | | N |
| SS | BVBS1284 | BVBS1284S001 | N | 14 Jul 2014 | 1 - 2 | SW8260B | VOC | m,p-Xylenes | 1.8 U | 1.8 | 4.5 | 5 | µg/kg | | N |
| SS | BVBS1284 | BVBS1284S001 | N | 14 Jul 2014 | 1 - 2 | SW8260B | VOC | Methylene chloride | 1.8 U | 1.8 | 9 | 10 | µg/kg | | N |
| SS | BVBS1284 | BVBS1284S001 | N | 14 Jul 2014 | 1 - 2 | SW8260B | VOC | Methyl-tert-butyl Ether (MTBE) | 0.9 U | 0.9 | 4.5 | 5 | µg/kg | | N |
| SS | BVBS1284 | BVBS1284S001 | N | 14 Jul 2014 | 1 - 2 | SW8260B | VOC | n-butylbenzene | 0.9 U | 0.9 | 4.5 | 5 | µg/kg | | N |
| SS | BVBS1284 | BVBS1284S001 | N | 14 Jul 2014 | 1 - 2 | SW8260B | VOC | n-Propylbenzene | 0.9 U | 0.9 | 4.5 | 5 | µg/kg | | N |
| SS | BVBS1284 | BVBS1284S001 | N | 14 Jul 2014 | 1 - 2 | SW8260B | VOC | o-Xylene | 0.9 U | 0.9 | 4.5 | 5 | µg/kg | | N |
| SS | BVBS1284 | BVBS1284S001 | N | 14 Jul 2014 | 1 - 2 | SW8260B | VOC | p-Isopropyltoluene | 0.9 U | 0.9 | 4.5 | 5 | µg/kg | | N |
| SS | BVBS1284 | BVBS1284S001 | N | 14 Jul 2014 | 1 - 2 | SW8260B | VOC | sec-Butylbenzene | 0.9 U | 0.9 | 4.5 | 5 | µg/kg | | N |
| SS | BVBS1284 | BVBS1284S001 | N | 14 Jul 2014 | 1 - 2 | SW8260B | VOC | Styrene | 0.9 U | 0.9 | 4.5 | 5 | µg/kg | | N |
| SS | BVBS1284 | BVBS1284S001 | N | 14 Jul 2014 | 1 - 2 | SW8260B | VOC | tert-Butylbenzene | 0.9 U | 0.9 | 4.5 | 5 | µg/kg | | N |
| SS | BVBS1284 | BVBS1284S001 | N | 14 Jul 2014 | 1 - 2 | SW8260B | VOC | Tetrachloroethene | 0.9 U | 0.9 | 4.5 | 5 | µg/kg | | N |
| SS | BVBS1284 | BVBS1284S001 | N | 14 Jul 2014 | 1 - 2 | SW8260B | VOC | Toluene | 0.9 U | 0.9 | 4.5 | 5 | µg/kg | | N |
| SS | BVBS1284 | BVBS1284S001 | N | 14 Jul 2014 | 1 - 2 | SW8260B | VOC | trans-1,2-Dichloroethene | 0.9 U | 0.9 | 4.5 | 5 | µg/kg | | N |
| SS | BVBS1284 | BVBS1284S001 | N | 14 Jul 2014 | 1 - 2 | SW8260B | VOC | trans-1,3-Dichloropropene | 0.9 U | 0.9 | 4.5 | 5 | µg/kg | | N |
| SS | BVBS1284 | BVBS1284S001 | N | 14 Jul 2014 | 1 - 2 | SW8260B | VOC | Trichloroethene | 0.9 U | 0.9 | 4.5 | 5 | µg/kg | | N |
| SS | BVBS1284 | BVBS1284S001 | N | 14 Jul 2014 | 1 - 2 | SW8260B | VOC | Trichlorofluoromethane | 1.8 U | 1.8 | 4.5 | 5 | µg/kg | | N |
| SS | BVBS1284 | BVBS1284S001 | N | 14 Jul 2014 | 1 - 2 | SW8260B | VOC | Trichloromethane (Chloroform) | 0.9 U | 0.9 | 4.5 | 5 | µg/kg | | N |
| SS | BVBS1284 | BVBS1284S001 | N | 14 Jul 2014 | 1 - 2 | SW8260B | VOC | Vinyl chloride | 1.8 U | 1.8 | 4.5 | 5 | µg/kg | | N |

**Notes:**

FD - field duplicate sample
FS - field split sample
N - normal sample
NC - no criteria
pH - pH standard units
GS - soil gas sample
SO - subsurface soil sample
µg/kg - micrograms per kilogram
µg/m3 - micrograms per cubic meter
mg/kg - milligrams per kilograms

**Class Abbreviations:**

| | |
|---|---|
| GENCHEM | general chemistry |
| HC | hydrocarbons |
| PAH | polycyclic aromatic hydrocarbons |
| PHTH | phthalates |
| SVOC | semi-volatile organic compound |
| VOC | volatile organic compound |

**Validation Flags**

| | |
|---|---|
| J | Analyte is present but the reported quantitation is estimated. |
| U | Analyte was not detected at the specified detection limit |
| UJ | Estimated detection limit. The result is estimated and may be a false negative due to related QC problems. |
| = | Reported quantitation represents the most accurate concentration for the given analyte. |

Appendix D-2

**Biovent Time Series Graphs - Bravo Test Stands, 2014**

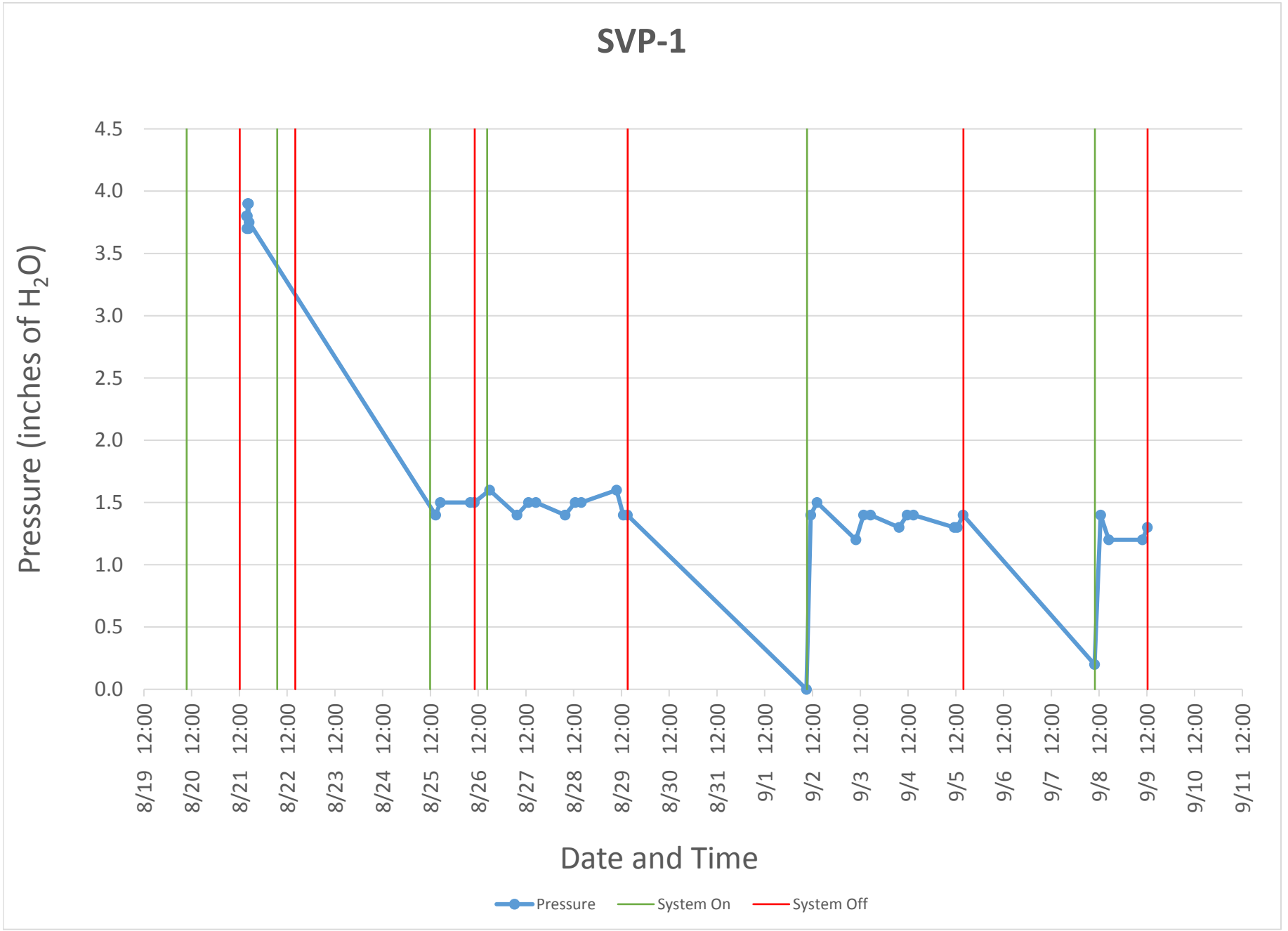
NASA SSFL, Ventura County, California

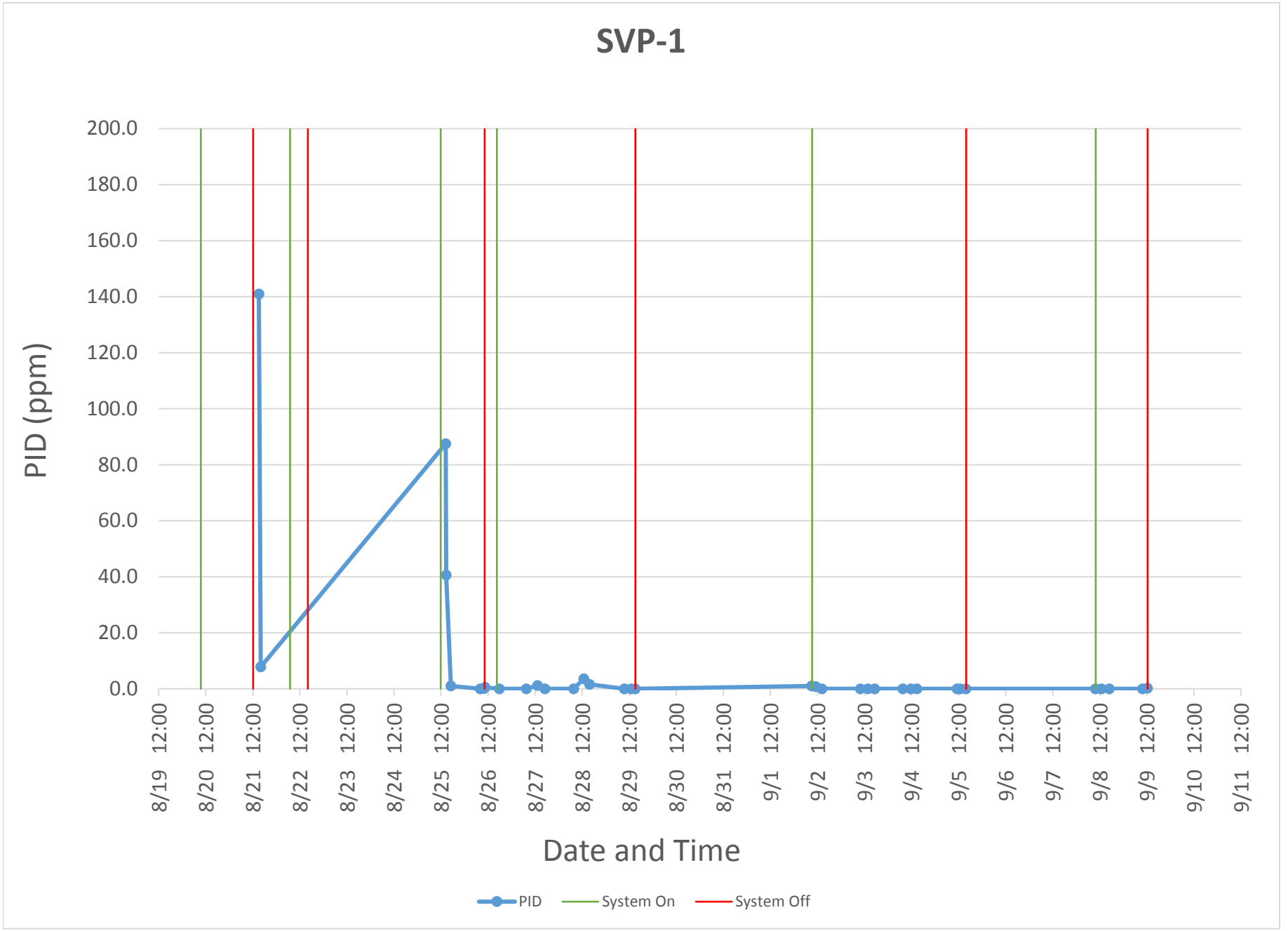
***Soil Vapor Probes (SVPs) Illustrated on these Graphs:***

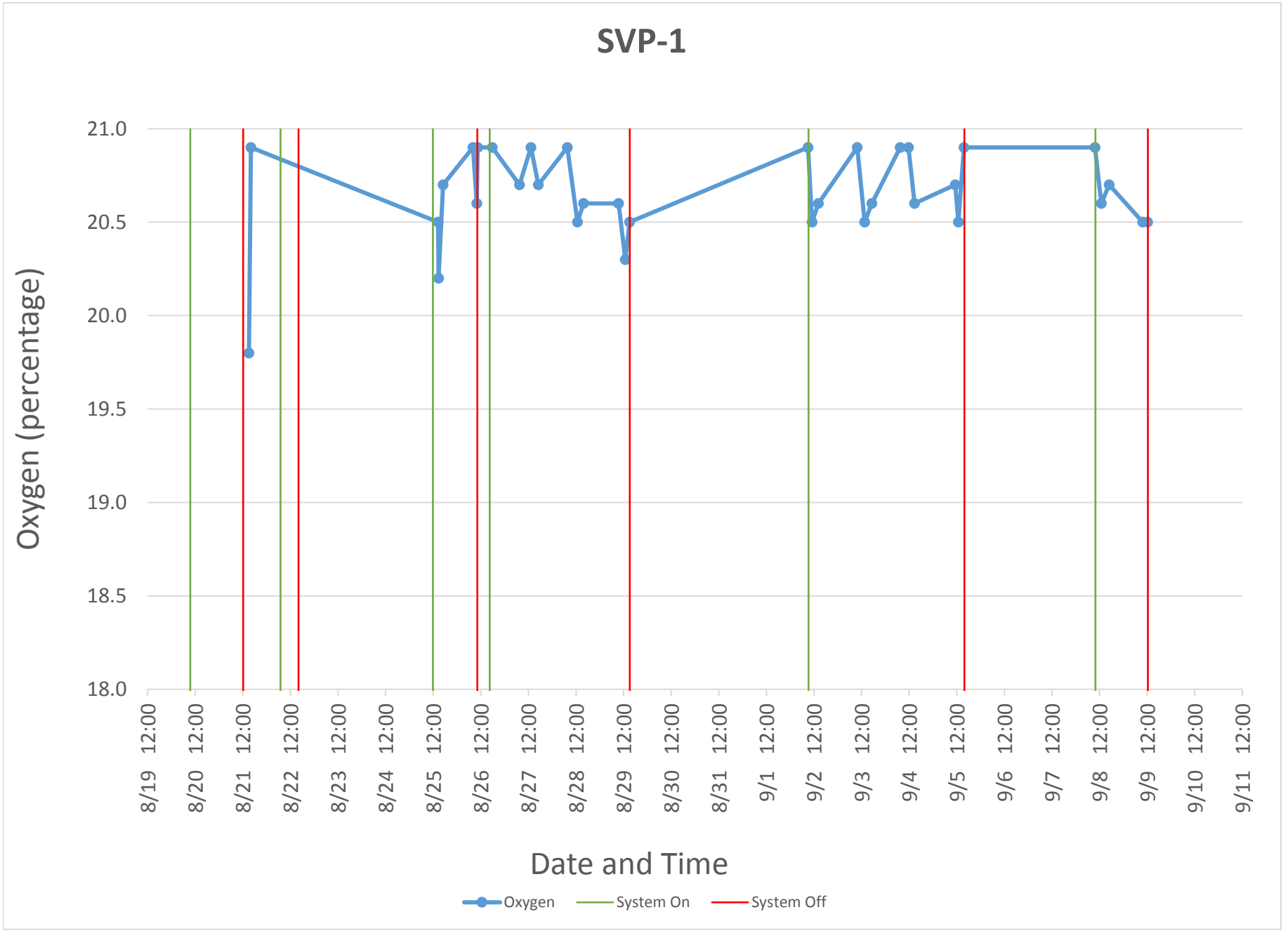
SVP-1
SVP-2
SVP-3
SVP-4

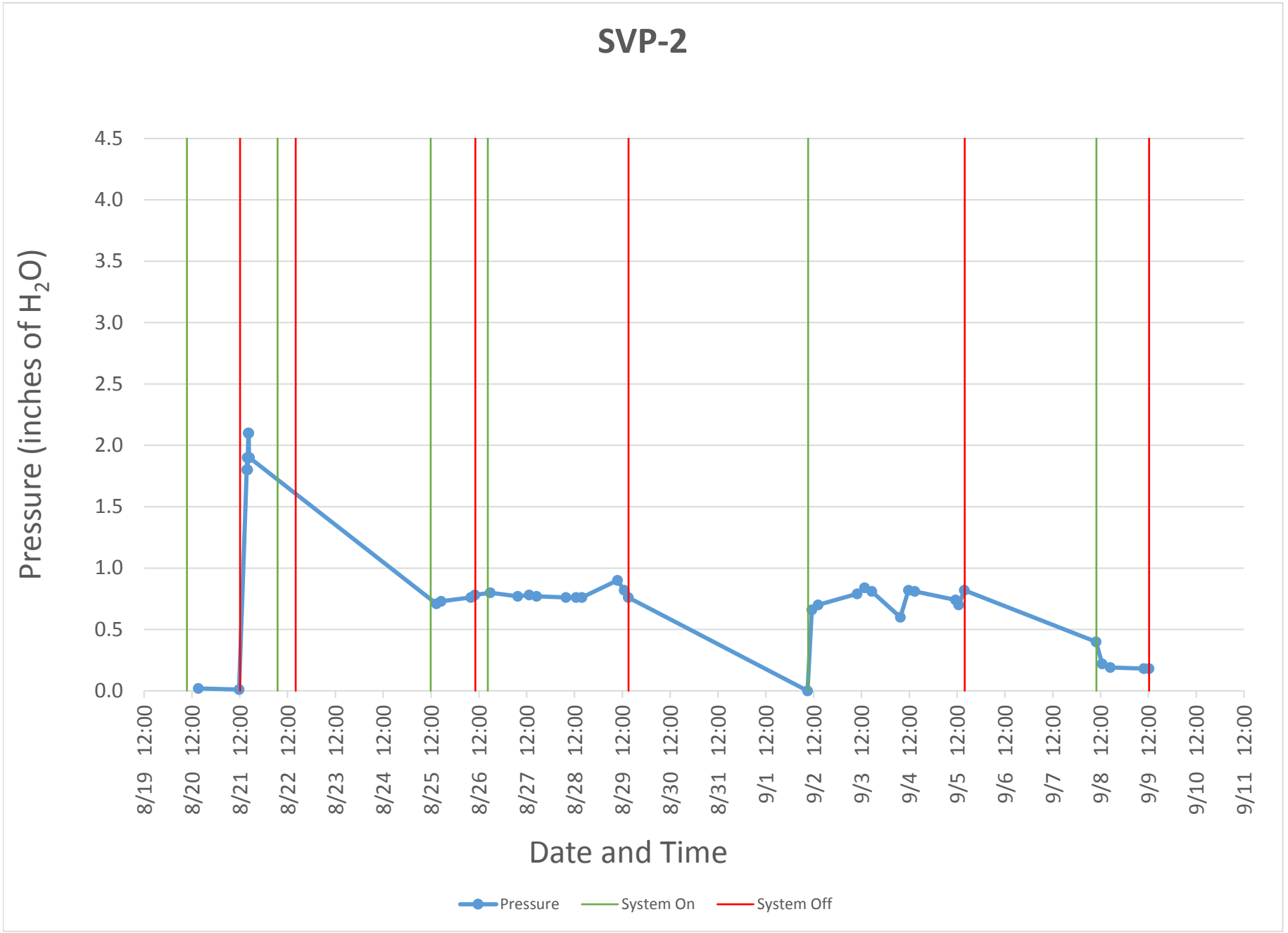
***Summary***

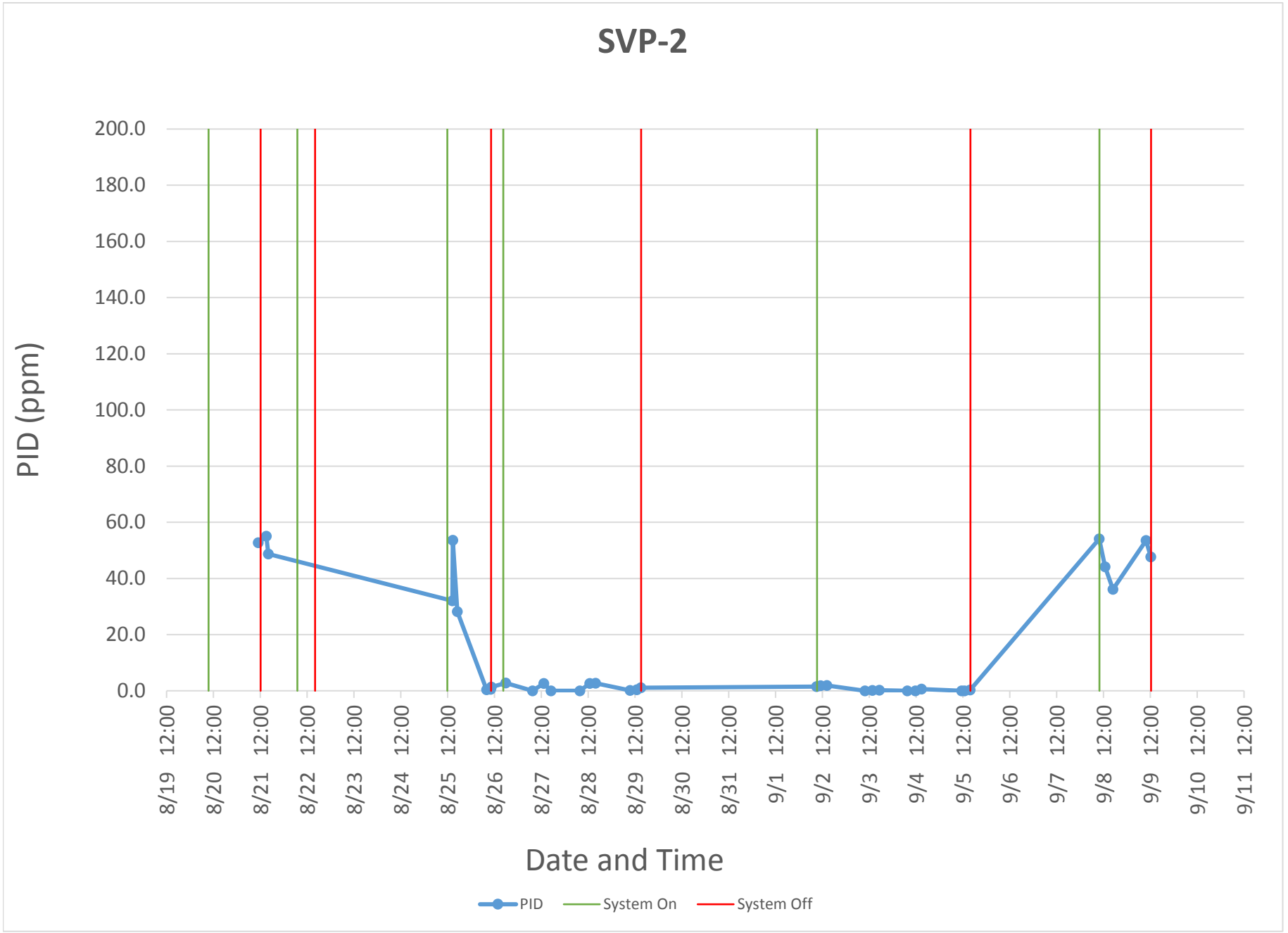
Four SVPs were monitored during bioventing operations at the Bravo Test Stands pilot study site in 2014. Parameters were collected at each of the SVPs listed above during bioventing operations. Parameters were collected at each of the SVPs listed above during bioventing operations. These parameters (oxygen concentration, pressure, and photoionization detector [PID] - used to measure volatile organic compounds [VOCs]) are illustrated below on graphs to observe changes over time at each location relative to the bioventing injection wells.


SVP-1
Pressure (inches of $H_2O$)
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
8/19 12:00
8/20 12:00
8/21 12:00
8/22 12:00
8/23 12:00
8/24 12:00
8/25 12:00
8/26 12:00
8/27 12:00
8/28 12:00
8/29 12:00
8/30 12:00
8/31 12:00
9/1 12:00
9/2 12:00
9/3 12:00
9/4 12:00
9/5 12:00
9/6 12:00
9/7 12:00
9/8 12:00
9/9 12:00
9/10 12:00
9/11 12:00
Date and Time
Pressure
System On
System Off


SVP-1
PID (ppm)
200.0
180.0
160.0
140.0
120.0
100.0
80.0
60.0
40.0
20.0
0.0
8/19 12:00
8/20 12:00
8/21 12:00
8/22 12:00
8/23 12:00
8/24 12:00
8/25 12:00
8/26 12:00
8/27 12:00
8/28 12:00
8/29 12:00
8/30 12:00
8/31 12:00
9/1 12:00
9/2 12:00
9/3 12:00
9/4 12:00
9/5 12:00
9/6 12:00
9/7 12:00
9/8 12:00
9/9 12:00
9/10 12:00
9/11 12:00
Date and Time
PID
System On
System Off


SVP-1
Oxygen (percentage)
21.0
20.5
20.0
19.5
19.0
18.5
18.0
8/19 12:00
8/20 12:00
8/21 12:00
8/22 12:00
8/23 12:00
8/24 12:00
8/25 12:00
8/26 12:00
8/27 12:00
8/28 12:00
8/29 12:00
8/30 12:00
8/31 12:00
9/1 12:00
9/2 12:00
9/3 12:00
9/4 12:00
9/5 12:00
9/6 12:00
9/7 12:00
9/8 12:00
9/9 12:00
9/10 12:00
9/11 12:00
Date and Time
Oxygen
System On
System Off


SVP-2
Pressure (inches of $H_2O$)
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
8/19 12:00
8/20 12:00
8/21 12:00
8/22 12:00
8/23 12:00
8/24 12:00
8/25 12:00
8/26 12:00
8/27 12:00
8/28 12:00
8/29 12:00
8/30 12:00
8/31 12:00
9/1 12:00
9/2 12:00
9/3 12:00
9/4 12:00
9/5 12:00
9/6 12:00
9/7 12:00
9/8 12:00
9/9 12:00
9/10 12:00
9/11 12:00
Date and Time
Pressure
System On
System Off


SVP-2
PID (ppm)
200.0
180.0
160.0
140.0
120.0
100.0
80.0
60.0
40.0
20.0
0.0
8/19 12:00
8/20 12:00
8/21 12:00
8/22 12:00
8/23 12:00
8/24 12:00
8/25 12:00
8/26 12:00
8/27 12:00
8/28 12:00
8/29 12:00
8/30 12:00
8/31 12:00
9/1 12:00
9/2 12:00
9/3 12:00
9/4 12:00
9/5 12:00
9/6 12:00
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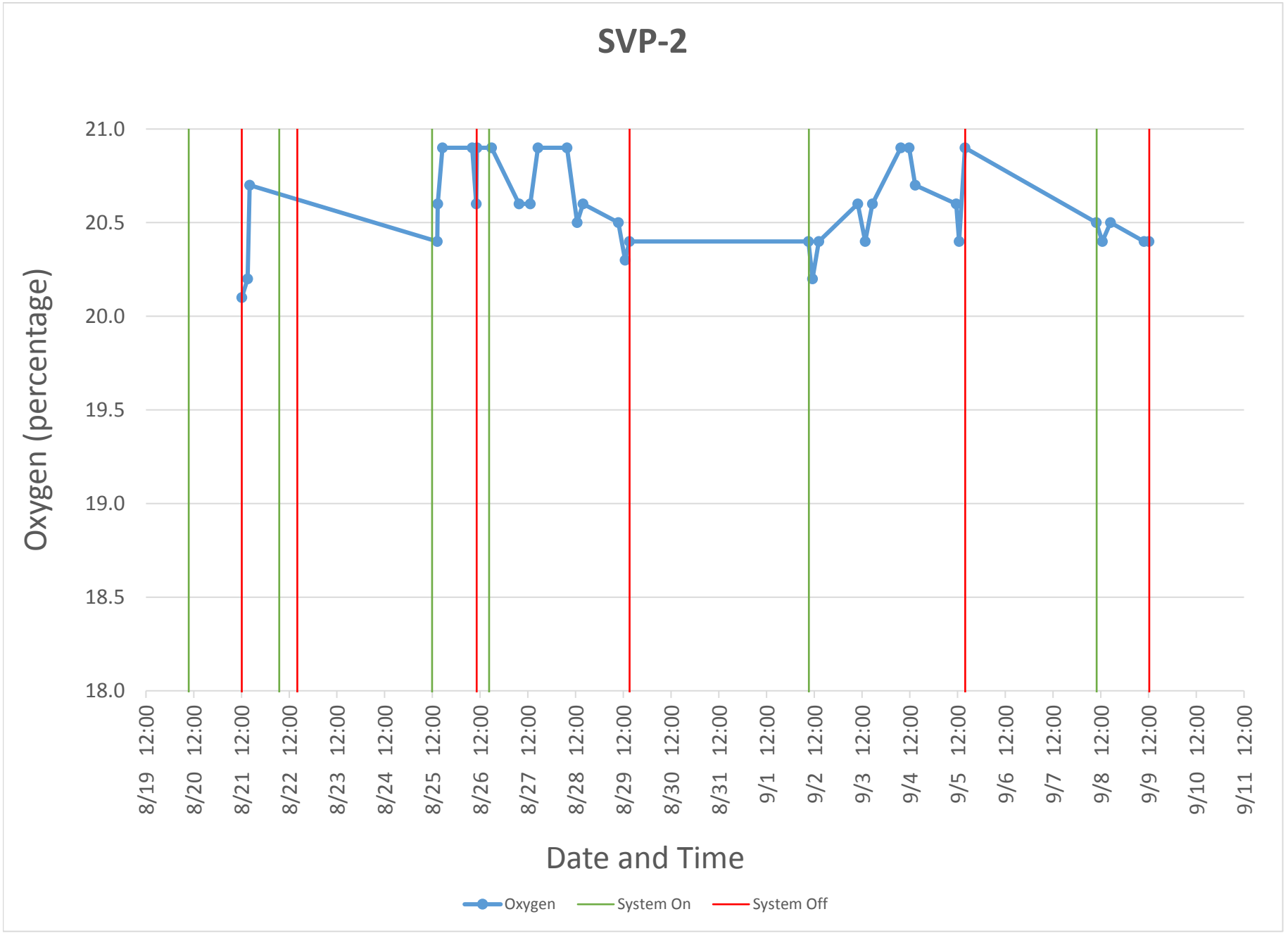
9/10 12:00
9/11 12:00
Date and Time
PID
System On
System Off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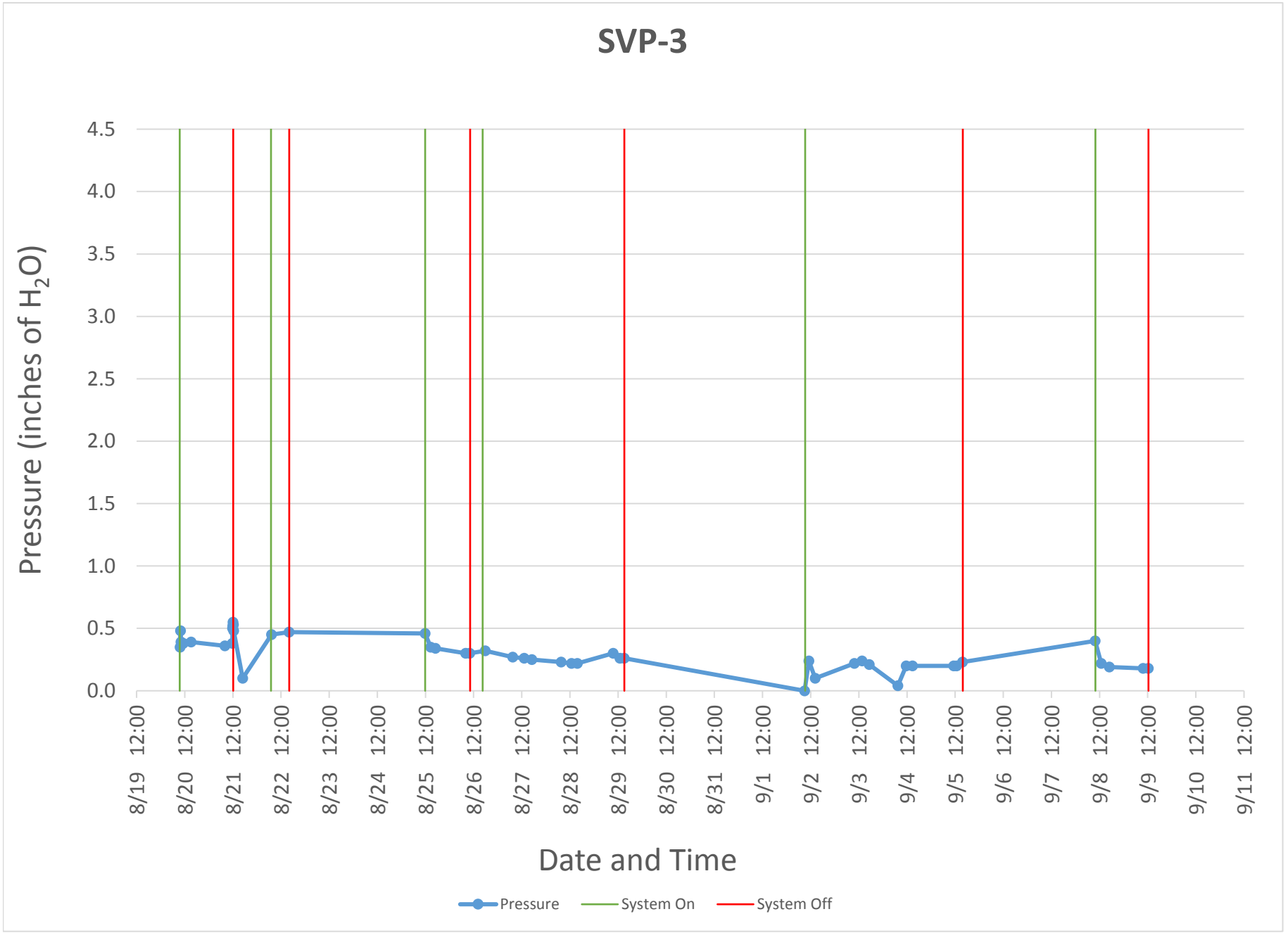
9/2 12:00
9/3 12:00
9/4 12:00
9/5 12:00
9/6 12:00
9/7 12:00
9/8 12:00
9/9 12:00
9/10 12:00
9/11 12:00
Date and Time
Oxygen
System On
System Off


SVP-3
Pressure (inches of $H_2O$)
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
8/19 12:00
8/20 12:00
8/21 12:00
8/22 12:00
8/23 12:00
8/24 12:00
8/25 12:00
8/26 12:00
8/27 12:00
8/28 12:00
8/29 12:00
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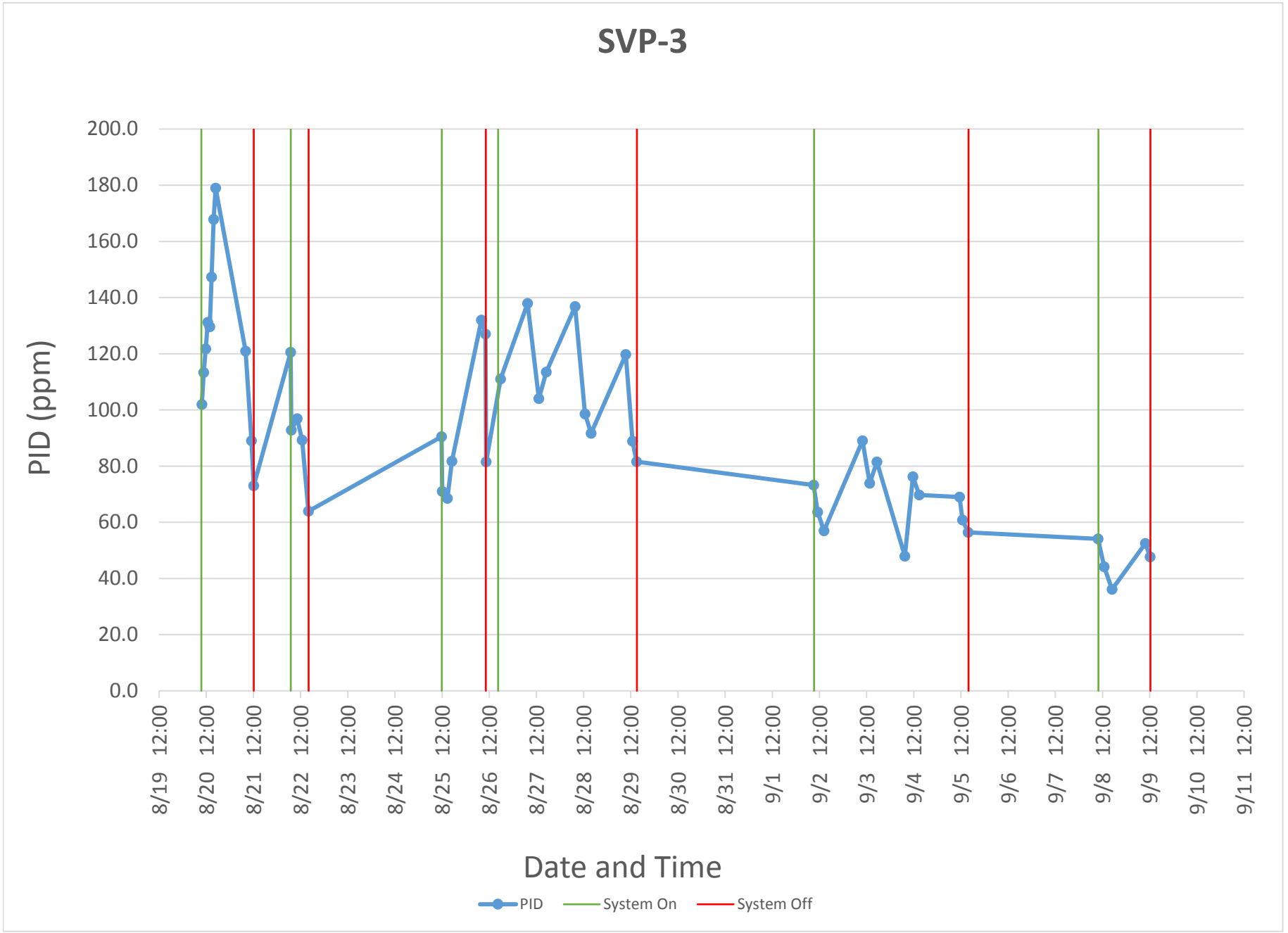
8/31 12:00
9/1 12:00
9/2 12:00
9/3 12:00
9/4 12:00
9/5 12:00
9/6 12:00
9/7 12:00
9/8 12:00
9/9 12:00
9/10 12:00
9/11 12:00
Date and Time
Pressure
System On
System Off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PID (ppm)
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160.0
140.0
120.0
100.0
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60.0
40.0
20.0
0.0
8/19 12:00
8/20 12:00
8/21 12:00
8/22 12:00
8/23 12:00
8/24 12:00
8/25 12:00
8/26 12:00
8/27 12:00
8/28 12:00
8/29 12:00
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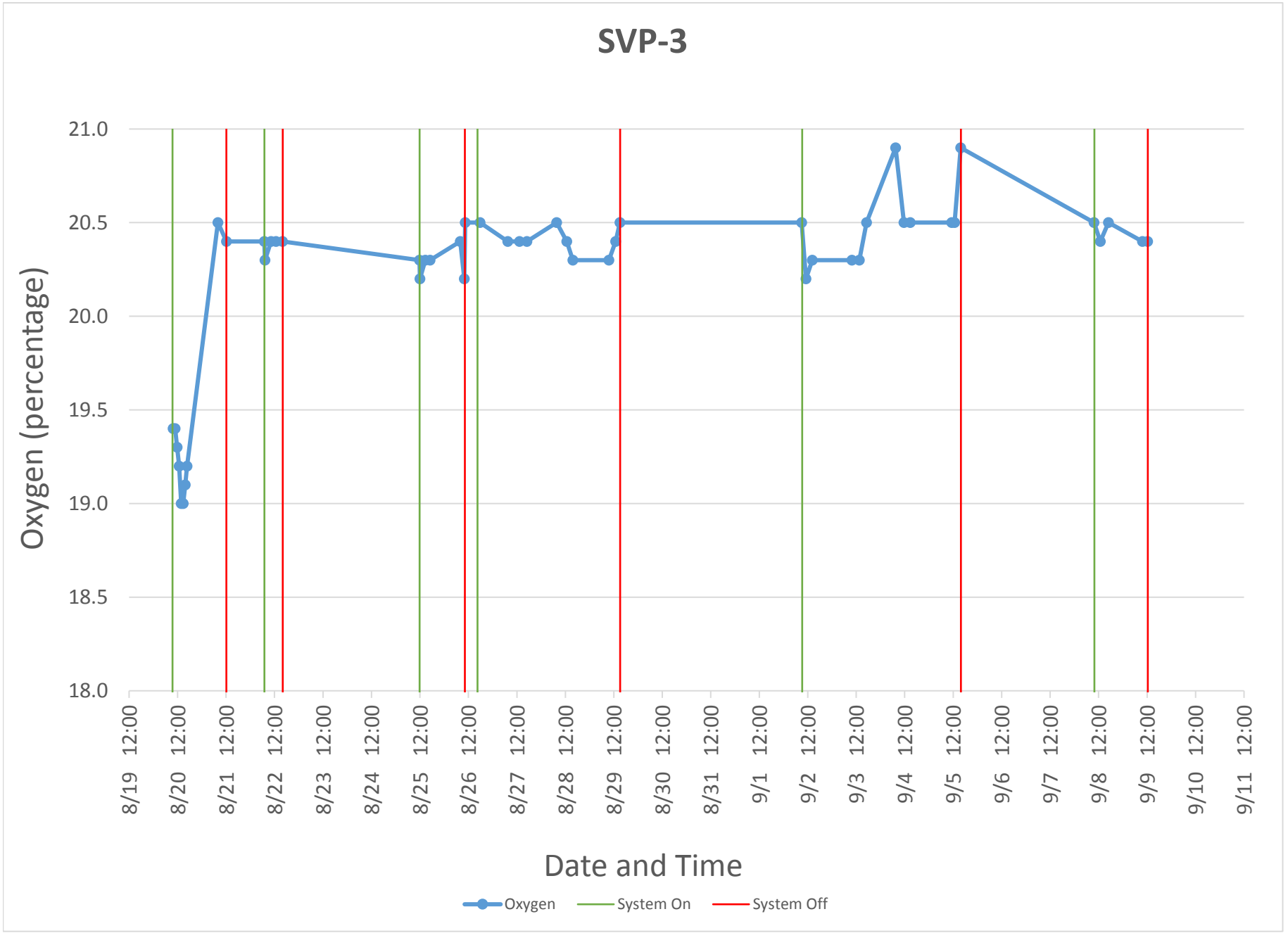
9/1 12:00
9/2 12:00
9/3 12:00
9/4 12:00
9/5 12:00
9/6 12:00
9/7 12:00
9/8 12:00
9/9 12:00
9/10 12:00
9/11 12:00
Date and Time
PID
System On
System Off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Oxygen (percentage)
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20.5
20.0
19.5
19.0
18.5
18.0
8/19 12:00
8/20 12:00
8/21 12:00
8/22 12:00
8/23 12:00
8/24 12:00
8/25 12:00
8/26 12:00
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9/6 12:00
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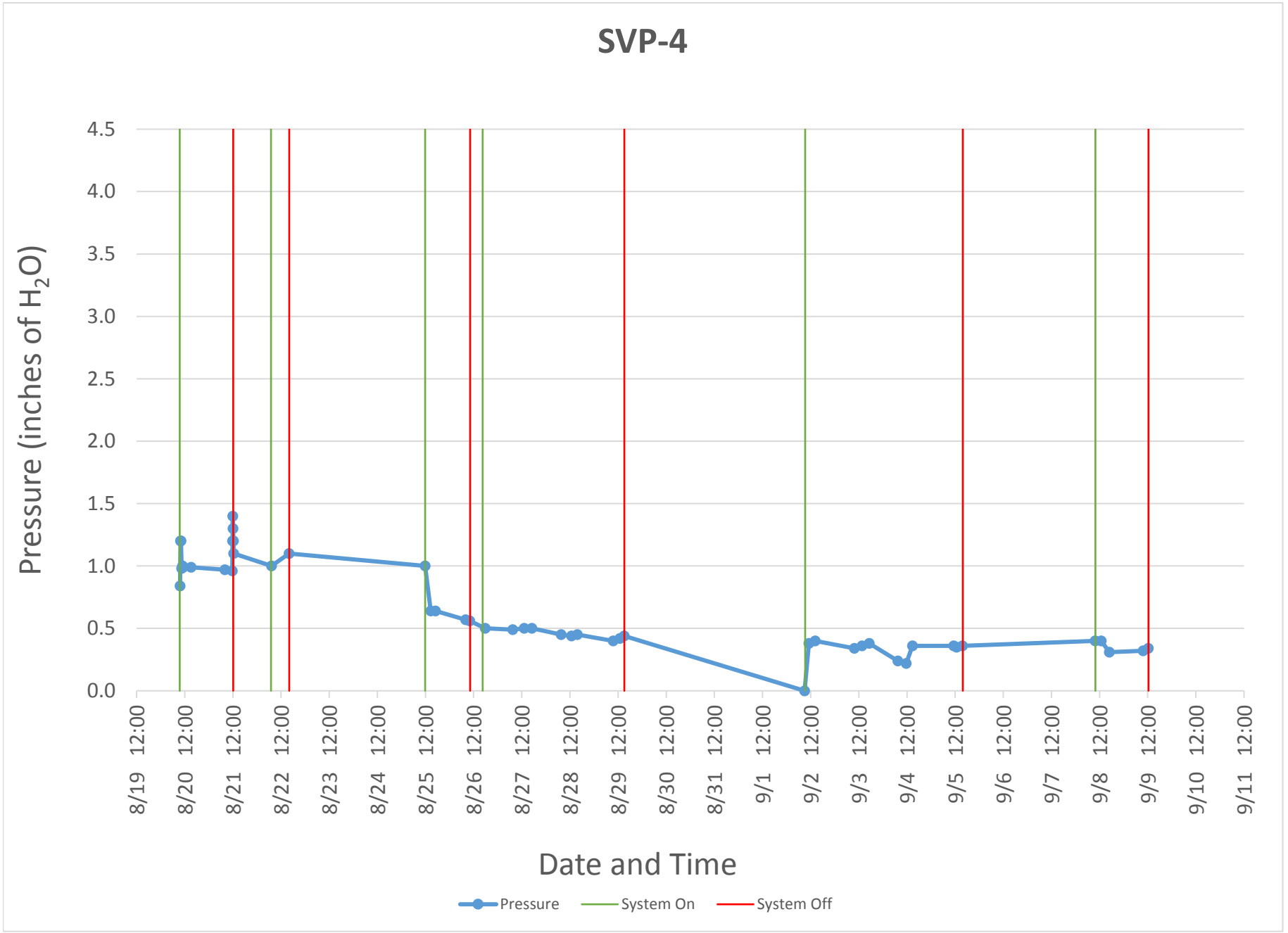
9/10 12:00
9/11 12:00
Date and Time
Oxygen
System On
System Off


SVP-4
Pressure (inches of $H_2O$)
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3.0
2.5
2.0
1.5
1.0
0.5
0.0
8/19 12:00
8/20 12:00
8/21 12:00
8/22 12:00
8/23 12:00
8/24 12:00
8/25 12:00
8/26 12:00
8/27 12:00
8/28 12:00
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8/30 12:00
8/31 12:00
9/1 12:00
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9/4 12:00
9/5 12:00
9/6 12:00
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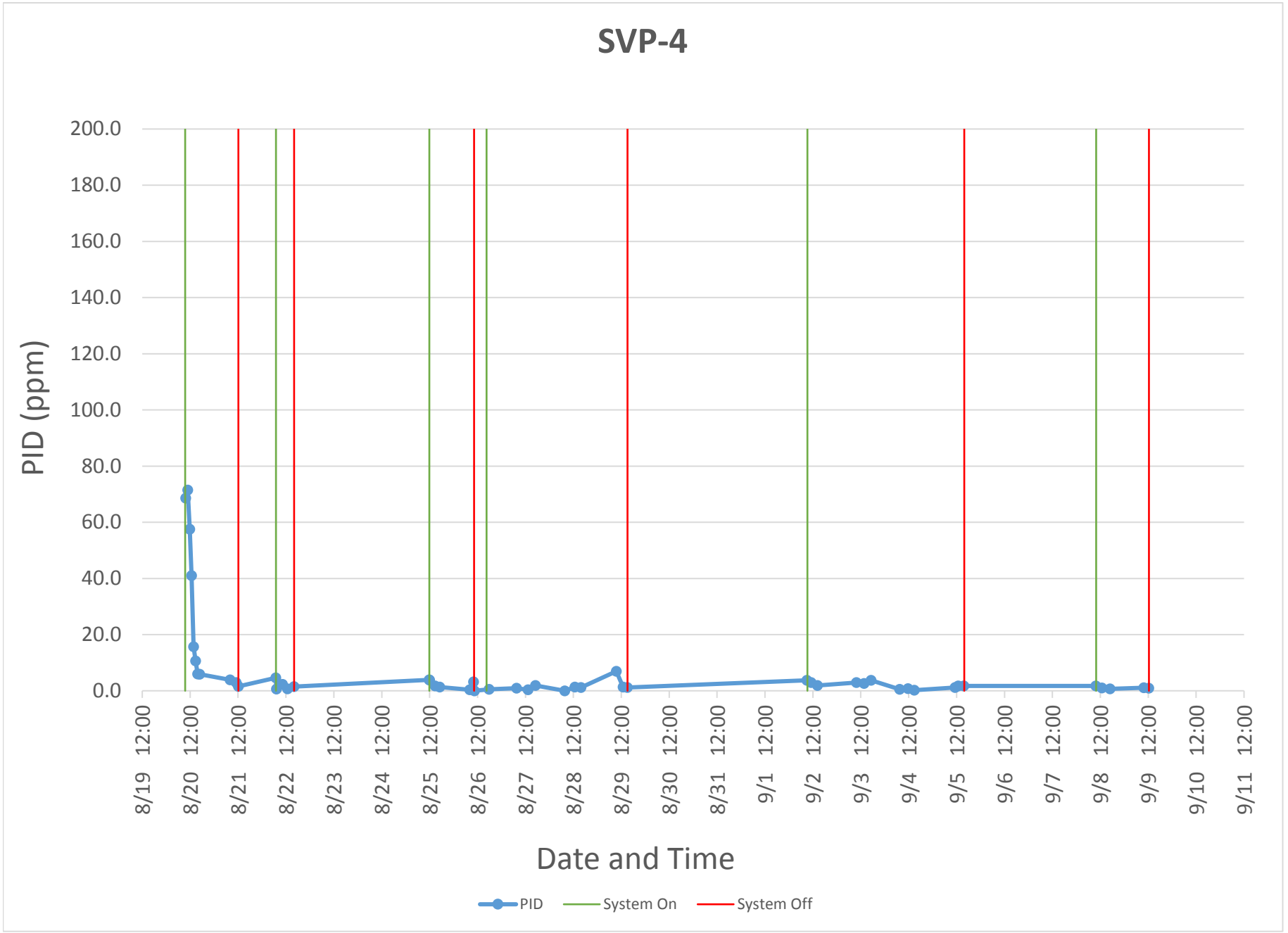
9/8 12:00
9/9 12:00
9/10 12:00
9/11 12:00
Date and Time
Pressure
System On
System Off


SVP-4
PID (ppm)
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180.0
160.0
140.0
120.0
100.0
80.0
60.0
40.0
20.0
0.0
8/19 12:00
8/20 12:00
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8/26 12:00
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9/6 12:00
9/7 12:00
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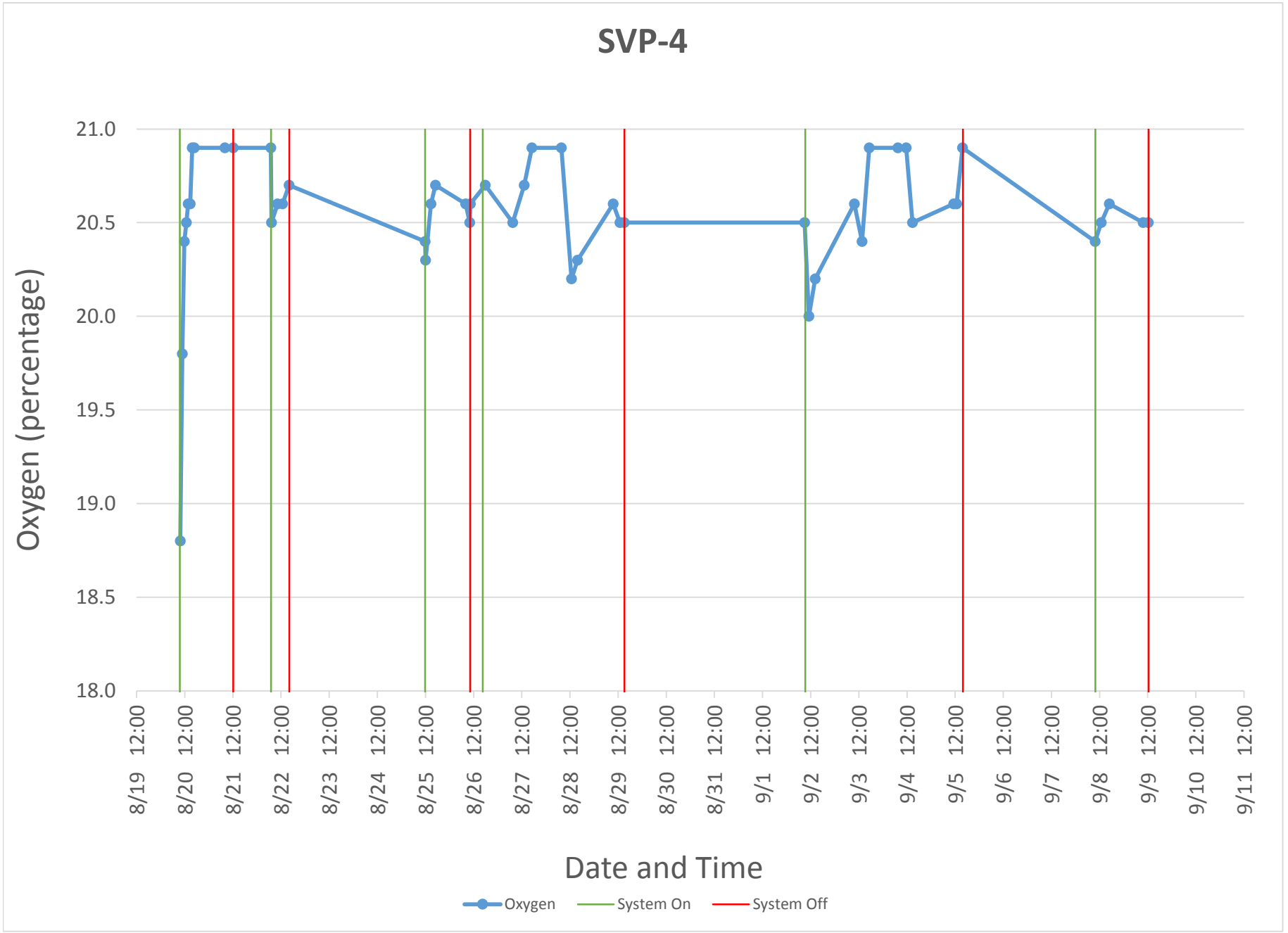
9/9 12:00
9/10 12:00
9/11 12:00
Date and Time
PID
System On
System Off


SVP-4
Oxygen (percentage)
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20.5
20.0
19.5
19.0
18.5
18.0
8/19 12:00
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9/5 12:00
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9/11 12:00
Date and Time
Oxygen
System On
System Off

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# Appendix E
# Bioventing Data and Evaluation

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CH2MHILL (Split)

# SOIL BORING / WELL LOG

PAGE: 1 OF 1

WELL NO: BVBS1293 (SVP-5)

PROJECT NAME: CH-505 Bioventing Treatability Study

START DATE/TIME: 2-4-15 / 7:50

LOCATION: Bravo Target Treatment Zone SSFL Ventura County, CA

END DATE/TIME: 2-4-15 / 900

Northeast of Bravo Test Stand 1, in the Bravo Skim Pond

LOGGER: J. Freed

DRILLING CONTRACTOR: Environmental Support Technologies

DRILLING EQUIPMENT: Geoprobe 5400 / Ford F-350

TOC/GROUND ELEVATION: Unavailable at TOD

BORING DIAMETER: 2.5"

GROUND ELEVATION: Unavailable at TOD

TOTAL DEPTH: 8

SWL: N/A

| Depth (ft) | Sample ID/ TYPE | Sample Interval | Recovery (ft/ft) | Soil Description<br>Soil name, uscs group symbol, color, moisture content, relative density, or consistency, soil structure, and/or mineralogy. | Comments<br>Depth of casing, drilling rate, drilling fluid loss, time, tests, and instrumentation. | Graphic Log | Well Construction Diagram<br>2- CO located 1" PVC wells |
|---|---|---|---|---|---|---|---|
| 1 | | | | Poorly graded sand (SP), moist, predominantly fine, less than 5% silt, Dark brown 10YR 3/3 TO Yellowish brown 10YR 5/6. minor lens of oxidation @ 1 ft, 2 cm, minor black lens @ ~2 ft, no strong odor throughout, loose. | 7:50 NOTE - All drilling and sampling equipment was decontaminated prior to start of boring using alconox & DI rinse. | | |
| 2 | | | / | wet w/ minor increase in silt 3.5 - 4 ft bgs, very dark green to bluish green staining, mild Petroleum odor | PID - 1.4 | | |
| 3 | See below | A.L. | | | | | |
| | | S.S. | 3.5/4 | | wet 3.5 - 4' bgs | | |
| 4 | | | | Poorly graded sand with silt (SP-SM), 4 - 6.5ft, Predominantly fine grained, approximately 10% silt, medium dense, minor rust-orange mottling throughout, yellowish brown 5/8, moist. | PID - 1.6 - 2.8 3.5-4 | | |
| 5 | | | | | | | |
| 6 | | | / | Poorly graded sand with silt (SP-SM), 10 - 15 % silt, Petroleum odor, medium dense, massive, non-plastic, greenish black 2.5/10GY moist, (6.5 - 8 ft). | Petroleum odor 6.5 - 8' bgs. PID - 1.5 - 2.8 | | |
| 7 | | | | | | | |
| | See below | A.L. | | | | | |
| 8 | | S.S. | 3.5/4 | | | | |
| 9 | | | | | Wells were installed as 2 seperate 1" PVC Probes 0-8', and 0-4', See field book for specs. | | |
| 10 | | | | | **Samples Collected:** | | |

| ID | Depth | Time |
|---|---|---|
| BVBS1293S001 | 3-4 | 800 |
| BVBS1293S001 SP | 3-4 | 800 |
| BVBS1293S002 | 7-8 | 845 |

*Samples were submitted for the following analyses:*

8270 SIM, D2216, ~~SW8045~~ VOC, SW-8015E, SW8015P, and SW8260B

PN: 476119.01.01

CH2MHILL

# SOIL BORING / WELL LOG

PAGE: 1 OF 1

WELL NO: BVBS1294 (SVP-6)
PROJECT NAME: CH-505 Bioventing Treatability Study
LOCATION: Bravo Target Treatment Zone SSFL Ventura County, CA
Northeast of Bravo Test Stand 1, in the Bravo Skim Pond
DRILLING CONTRACTOR: Environmental Support Technologies
TOC/GROUND ELEVATION: Unavailable at TOD
GROUND ELEVATION: Unavailable at TOD

START DATE/TIME: 2-4-15 / 925
END DATE/TIME: 2-4-15 / 945
LOGGER: J. Freed
DRILLING EQUIPMENT: Geoprobe 5400
BORING DIAMETER: 2.5"
TOTAL DEPTH: 8' SWL: N/A

| Depth (ft) | Sample ID/ TYPE | Sample Interval | Recovery (ft/ft) | Soil Description: Soil name, uscs group symbol, color, moisture content, relative density, or consistency, soil structure, and/or mineralogy. | Comments: Depth of casing, drilling rate, drilling fluid loss, time, tests, and instrumentation. | Graphic Log | Well Construction Diagram: 2- Co-located 1" PVC Probes |
|---|---|---|---|---|---|---|---|
| 1 | | | | Poorly graded sand (SP), loose, clark yellowish brown 10YR 4/6, moist, predominantly fine grained, | NOTE - All drilling and sampling equipment was decontaminated prior to drilling activities, using Alconox and DI rinse. | | |
| 2 | | A.L. | 1 | Silty Sand (SM), moist, slightly moldable, soft, mild organic odor dark yellowish brown 3/6, approx. 20 % silt. (1.5' - 2.25'), No TPH odor. | PID - 0.1 | | |
| 3 | | A.L. | 3/4 | Poorly graded sand (SP), 2.25' - 4', dark yellowish brown 10YR 4/6, moist, wet from 3.5 - 4 ft, rust-orange mottling throughout, no TPH odor. | PID - 0.1 - 0.4 | | |
| 4 | | SS TUBE | | | | | |
| 5 | | | | | | | |
| 6 | | A.L. | 1 | Sharp transition to poorly graded sand with silt (SP-SM), wet, med. dense, strong petroleum odor, massive, black 2.5/1, moldable. | PID - 42.8 wet soil @ 6' bgs | | |
| 7 | | SS TUBE | | Dark greenish gray ~~7/1~~ 5/1 GLEY 1 4/10GY, moisture decreases w/depth, | PID - 9.8 (Color change from 6.5 - 8 ft) | | |
| 8 | | | 3/4 | increasing ~~floating~~ stiffness w/depth. JF | | | |
| 9 | | | | | | | |
| 10 | | | | | | | |

**Samples Collected:**

| ID | Depth | Time |
|---|---|---|
| ~~BVBS1294S001~~ JF | 2-4 | 945 |
| BVBS1294S001 | | |
| ~~BVBS1294S002~~ JF | | |
| BVBS1294S002 | 6-7 | 1000 |

*Samples were submitted for the following analyses:*
8270 SIM, D2216, ~~SW9045~~ JF, SW-8015E, SW8015P, and SW8260B

PN: 476119.01.01

CH2MHILL

# SOIL BORING / WELL LOG

PAGE: 1 OF 1

WELL NO: BVBS1295 (DUP) (BV well)
PROJECT NAME: CH-505 Bioventing Treatability Study
LOCATION: Bravo Target Treatment Zone SSFL Ventura County, CA
Northeast of Bravo Test Stand 1, in the Bravo Skim Pond
DRILLING CONTRACTOR: Environmental Support Technologies
TOC/GROUND ELEVATION: Unavailable at TOD
GROUND ELEVATION: Unavailable at TOD

START DATE/TIME: 2-4-15 / 1025
END DATE/TIME: 2-4-15 / 1100
LOGGER: J. Freed
DRILLING EQUIPMENT: Geoprobe 5400 overdrive w/ hand auger
BORING DIAMETER: 2.5 (3.25")
TOTAL DEPTH: 8 SWL: N/A

| Depth (ft) | Sample ID/ TYPE | Sample Interval | Recovery (ft/ft) | Soil Description: Soil name, uscs group symbol, color, moisture content, relative density, or consistency, soil structure, and/or mineralogy. | Comments: Depth of casing, drilling rate, drilling fluid loss, time, tests, and instrumentation. | Graphic Log | Well Construction Diagram |
|---|---|---|---|---|---|---|---|
| 1 | | | | Poorly graded sand (SP), loose, predominantly fine grained, moist. Silt lens @ 2 ft (3 cm), moldable, Silty sand lens @ 2.5 ft, med. dense, moldable. Dark yellowish brown 10YR 4/6. | NOTE - All drilling and sampling equipment was decanned prior to start of boring. | | |
| 2 | | | 1 | | PID - 0.1 | | |
| 3 | | A.L. | | | | | |
| 4 | | S.S. | 3.5/4 | | PID - 0.1 | | |
| 5 | | | | Sandy Silt (ML), wet, medium plasticity, moldable, massive, strong petroleum odor 5.5 ft - 6.5 ft. Black 2.5Y 2.5/1, approx. 30% sand, 5.7-6.6 ft. is black & massive. | WET @ 5 ft. Petroleum odor @ 5.5' PID - 55.4 | | |
| 6 | | A.L. | 1 | | | | |
| 7 | | S.S. TUBE | | Poorly graded sand with silt (SP-SM), medium dense, massive, predominantly fine, mild petroleum odor, approx. 10% silt, dry, crumbles with hand pressure. Partially cemented sand clusters observed 6.5 - 8 ft bgs. | PID - 43.0 | | |
| 8 | | | 4/4 | | | | |
| 9 | | | | | | | |
| 10 | | | | | | | |

**Samples Collected:**

| ID | Depth | Time |
|---|---|---|
| BVBS1295S001 | 2.5-4 | 1040 |
| BVBS1295D001 | 2.5-4 | 1040 |
| BVBS1295S002 | 5.5-7 | 1100 |

*Samples were submitted for the following analyses:*
8270 SIM, D2216, ~~SW8015~~ JF, SW-8015E, SW8015P, and SW8260B

PN: 476119.01.01

CH2MHILL (MS)

# SOIL BORING / WELL LOG

PAGE: 1 OF 1

WELL NO: BVBS1296 (SVP-7)
PROJECT NAME: CH-505 Bioventing Treatability Study
LOCATION: Bravo Target Treatment Zone SSFL Ventura County, CA
Northeast of Bravo Test Stand 1, in the Bravo Skim Pond
DRILLING CONTRACTOR: Environmental Support Technologies
TOC/GROUND ELEVATION: Unavailable at TOD
GROUND ELEVATION: Unavailable at TOD

START DATE/TIME: 2-4-15 / 1145
END DATE/TIME: 2-4-15 / 1230
LOGGER: J. Freed
DRILLING EQUIPMENT: Geoprobe 5400
BORING DIAMETER: 2.5"
TOTAL DEPTH: 8 SWL: N/A

| Depth (ft) | Sample ID/ TYPE | Sample Interval | Recovery (ft/ft) | Soil Description (Soil name, uscs group symbol, color, moisture content, relative density, or consistency, soil structure, and/or mineralogy.) | Comments (Depth of casing, drilling rate, drilling fluid loss, time, tests, and instrumentation.) |
|---|---|---|---|---|---|
| 1 | | | | Poorly graded sand (SP), dark brown 10YR 3/3, moist, predominantly fine, loose. | NOTE - All drilling and sampling equipment was decontaminated prior to drilling activities at this hole. |
| 2 | | | / | Sandy SILT (ML), moist, medium dense, laminated very finely (1/2cm) and alternating dark gray/rust-orange from 1.9' to 2.2', no odor, (dark gray 10YR 4/1 to yellowish red 5YR 4/6). | NOTE - original location met refusal @ 5 ft bgs. this location was moved South 5 ft. |
| 3 | | A.L. | | | |
| 4 | | S.S. Tube | 3.5/4 | Poorly graded sand (SP) (2.2' - 4.5'), strong brown 7.5YR 5/8, reddish, possibly oxidized, loose. 1½" - 2", fractured sandstone clasts in Acetate sleeve, ~~fr~~ rounded, brittle, crumbles with hand pressure. | PID - 2.0 |
| 5 | | | | | PID - 1.4 |
| 6 | | | / | Poorly graded sand (SP), moderately firm, cracks with hand pressure, unconsolidated, brown 10YR 5/3, massive, no petroleum odor, moist (4.5 - ~~9~~) | Hard drilling @ 5.5 ft. |
| 7 | | A.L. | | | PID - 0.2 |
| 8 | | S.S. Tube | 4/4 | Poorly graded sand (SP), moist, petroleum odor, contains ~ 10% coarse sand, angular, otherwise predominantly fine grained, dense, moist, crumbles with hand pressure, (7 - 8'), very dark greenish gray GLEY 3/10GY. | PID - 0.2 |
| 9 | | | | | |
| 10 | | | | | |

**Samples Collected:**

| ID | Depth | Time |
|---|---|---|
| BVBS1296S001 | 3-4 | 1150 |
| BVBS1296S001 MS | 3-4 | 1150 |
| BVBS1296S001 SD | 3-4 | 1150 |
| BVBS1296S002 | 7-8 | 1300 |

*Samples were submitted for the following analyses:*
8270 SIM, D2216, ~~SW9045~~ SW-8015E, SW8015P, and SW8260B

Graphic Log

**Well Construction Diagram**
2-co-located 1" PVC wells

PN: 476119.01.01

CH2MHILL MS/MSD SB15

# SOIL BORING LOG

PAGE: 1 OF 1

Boring ID: BVBS1293 (S003 / S004)
PROJECT NAME: CH-505 Bioventing Treatability Study
LOCATION: Bravo Target Treatment Zone SSFL Ventura County, CA
Northeast of Bravo Test Stand 1, in the Bravo Skim Pond
DRILLING CONTRACTOR: Environmental Support Technologies
OC/GROUND ELEVATION: Unavailable at TOD
GROUND ELEVATION: Unavailable at TOD

START DATE/TIME: 3/3/15 730
END DATE/TIME: 3/3/15 745
LOGGER: J. Freed
DRILLING EQUIPMENT: Geoprobe GH-40
BORING DIAMETER: 2 1/4"
TOTAL DEPTH: 8' SWL: N/A

| Depth (ft) | Sample ID/ TYPE | Sample Interval | Recovery (ft/ft) | Soil Description: Soil name, uscs group symbol, color, moisture content, relative density, or consistency, soil structure, and/or mineralogy. | Comments: Depth of casing, drilling rate, drilling fluid loss, time, tests, and instrumentation. | Graphic Log |
|---|---|---|---|---|---|---|
| 1 | | | 3.5/4 | Poorly graded Sand (SP), moist, Dark brown 10YR 3/3, < 5% silt, predominantly fine. Minor oxidation Lamination @ 2' 2" reddish brown 2.5 YR 4/4 (1/2" thick), 1" silty sand lens @ 3', moist, dark brown 7.5 YR 3/2. Trace coarse sand to fine gravel @ 3.5' bgs, sub-angular, Large 1" Sandstone clast in shoe @ 4' bgs. Loose. | All drilling and sampling equipment decontaminated with alconox solution and DI water prior to start of boring? (Yes) / No | |
| 2 | | | | | PID - 0.0 | |
| 3 | See below | Acetate Liner SS Sleeve | | | | |
| 4 | | | 4/4 | Poorly graded sand w/ silt (SP-SM), moist, predominantly fine, angular to sub-rounded, approx. 10% silt. Dark brown 7.5 YR 3/2 oxidized ~~Least~~ mottling 4 - 6 ft bgs. Sand is yellowish brown 5/8. Silt increases w/ depth (< 15%), increasing stiffness w/ depth, moderately firm. | | |
| 5 | | | | | | |
| 6 | | | / | | PID - 1.4 ppm | |
| 7 | See below | Acetate liner SS Sleeve | | | | |
| 8 | | | / | | TD @ 8' @ 745 | |
| 9 | | | | | | |
| 10 | | | | | | |

**Samples Collected:**

| ID | Depth | Time |
|---|---|---|
| BVBS1293S003 | 3-4 | 740 |
| BVBS1293S003 MS | 3-4 | 740 |
| BVBS1293S003 SD | 3-4 | 740 |
| BVBS1293S004 | 7-8 | 750 |

*Samples were submitted for the following analyses:*
8270C SIM, D2216, SW9045, SW8015E, SW8015P, and SW8260B

PN: 476119.01.02

(FD Soil-6

CH2MHILL

# SOIL BORING LOG

PAGE: 1 OF 1

Boring ID: BVBS1294 (SOO3 ; SOO4)
PROJECT NAME: CH-505 Bioventing Treatability Study
LOCATION: Bravo Target Treatment Zone SSFL Ventura County, CA
Northeast of Bravo Test Stand 1, in the Bravo Skim Pond
DRILLING CONTRACTOR: Environmental Support Technologies
OC/GROUND ELEVATION: Unavailable at TOD
GROUND ELEVATION: Unavailable at TOD

START DATE/TIME: 3/3/15 945
END DATE/TIME: 3/3/15 1010
LOGGER: J. Freed
DRILLING EQUIPMENT: Geoprobe GH-40
BORING DIAMETER: 2 1/4"
TOTAL DEPTH: 8 SWL: N/A

| Depth (ft) | Sample ID/ TYPE | Sample Interval | Recovery (ft/ft) | Soil Description<br>Soil name, uscs group symbol, color, moisture content, relative density, or consistency, soil structure, and/or mineralogy. | Comments<br>Depth of casing, drilling rate, drilling fluid loss, time, tests, and instrumentation. | Graphic Log |
|---|---|---|---|---|---|---|
| 1 | | | | Poorly graded Sand (SP), wet, predominantly fine, trace coarse sand, < 10% silt. Very dark brown 10YR 2/2. | All drilling and sampling equipment decontaminated with alconox solution and DI water prior to start of boring? (Yes) / No | |
| 2 | | Acetate Liner | / | Becomes dense - 2-3', Silty Sand (SM), dark brown / rust-orange alternating laminations ~ 1/8", approx. 20% silt in silty sand lenses / poorly graded sand, fine grained < 5% silt in SP lenses. | | |
| 3 | See below | S.S. Sleeve | 3.5/4 | Sharp transition to poorly graded Sand (SP) @ 2.5 - 3'9", moist, predominantly fine, < 10% silt. minor silty sand lens @ 3'4" to 3'6", mild odor. Oxidation present from 3 - 3.5 ft, mottled. Sand is yellowish brown 10YR 5/6 | PID - 0.1 | |
| 4 | | | | | | |
| 5 | | | | | | |
| 6 | | | / | S. transition to poorly graded sand with silt, wet, (SP-SM), black, massive, strong petroleum odor. moderately dense 6-7 ft, very dense @ transition to dark greenish gray GLEY 1 4/10 GY, at 6.5 - 8 ft. Wood debris @ 7.5 ft. | PID - 140 ppm | |
| 7 | See below | Acetate liner S.S. sleeve | | | | |
| 8 | | | / | | TD @ 8' @ 1010 | |
| 9 | | | | | | |
| 10 | | | | | | |

**Samples Collected:**

| ID | Depth | Time |
|---|---|---|
| BVBS1294S003 | 2-4 | 950 |
| BVBS1294D003 | 2-4 | 950 |
| BVBS1294S004 | 6-7 | 1015 |

*Samples were submitted for the following analyses:*
8270C SIM, D2216, SW9045, SW8015E, SW8015P, and SW8260B

PN: 476119.01.02

Soil 1 BV

CH2MHILL

# SOIL BORING LOG

PAGE: 1 OF

Boring ID: BVBS1295 (S003 & S004)
PROJECT NAME: CH-505 Bioventing Treatability Study
LOCATION: Bravo Target Treatment Zone SSFL Ventura County, CA
Northeast of Bravo Test Stand 1, in the Bravo Skim Pond
DRILLING CONTRACTOR: Environmental Support Technologies
OC/GROUND ELEVATION: Unavailable at TOD
GROUND ELEVATION: Unavailable at TOD

START DATE/TIME: 3/3/15 900
END DATE/TIME: 3/3/15 910
LOGGER: J. Freed
DRILLING EQUIPMENT: Geoprobe GH-40
BORING DIAMETER: 2 1/4"
TOTAL DEPTH: 8 SWL: N/A

| Depth (ft) | Sample ID/ TYPE | Sample Interval | Recovery (ft/ft) | Soil Description<br>Soil name, uscs group symbol, color, moisture content, relative density, or consistency, soil structure, and/or mineralogy. | Comments<br>Depth of casing, drilling rate, drilling fluid loss, time, tests, and instrumentation. | Graphic Log |
|---|---|---|---|---|---|---|
| 1 | | | | Poorly graded sand (SP), wet, dark brown (upper 6"), transitions to dark yellowish brown 10 YR 4/6 to end of core, predominantly fine grained. 1/2" sandy silt lens @ 1'1/2" bgs, dark gray, ~ 20% sand. Fine orange laminations @ 1'11" to 2'2", perpendicular to core, increasing strength w/ depth, < 5% silt overall, NO TPH odor, | All drilling and sampling equipment decontaminated with alconox solution and DI water prior to start of boring? (Yes) / No | |
| 2 | | | 1 | | PID - 0 | |
| 3 | See below | Acetate liner | | | | |
| 4 | | SS Sleeve | 3 5/4 | Poorly graded sand (SP) as above to 4'3". Small, black lens, sandy silt (organic), 4'3" to 4'5", massive, mild odor - possibly organic. Sharp transition to poorly graded sand, moist, predominantly fine with ~ 10-15% coarse gravel, angular, (4'5"-6') | PID - 0<br>PID - 12.0 | |
| 5 | | | | | | |
| 6 | | | 1 | Transitions to poorly graded sand with silt (SP-SM), trace coarse sand, angular, mild TPH odor 6.5 to 7', minor silty sand lens 6'1" to 6'2". Coarse sand to trace fine gravel increase to approx. 10% to end of core. TPH odor @ 8 ft | PID - 0.8 | |
| 7 | See below | Acetate liner | | | | |
| 8 | | SS Sleeve | 5'8" 5/4' | | PID - 5.4 | |
| 9 | | | | | TD @ 8' @ 910 | |
| 10 | | | | | | |

**Samples Collected:**

| ID | Depth | Time |
|---|---|---|
| BVBS1295S003 | 2.5 - 4.5 | 900 |
| BVBS1295S003 SD | 2.5 - 4.5 | 900 |
| BVBS1295S004 | 5.5 - 8 | 910 |

*Samples were submitted for the following analyses:*
8270C SIM, D2216, SW9045, SW8015E, SW8015P, and SW8260B

PN: 476119.01.02

SVI-7

CH2MHILL

# SOIL BORING LOG

PAGE: 1 OF 1

Boring ID: BVIS1296 (S003 & S004)
PROJECT NAME: CH-505 Bioventing Treatability Study
LOCATION: Bravo Target Treatment Zone SSFL Ventura County, CA
Northeast of Bravo Test Stand 1, in the Bravo Skim Pond
DRILLING CONTRACTOR: Environmental Support Technologies
DRILLING EQUIPMENT: Geoprobe GH-40
TOC/GROUND ELEVATION: Unavailable at TOD
BORING DIAMETER: 2¼"
GROUND ELEVATION: Unavailable at TOD
TOTAL DEPTH: 8
SWL: N/A
START DATE/TIME: 3/3/15 810
END DATE/TIME: 3/3/15 830
LOGGER: J. Freed

| Depth (ft) | Sample ID/ TYPE | Sample Interval | Recovery (ft/ft) | Soil Description<br>Soil name, uscs group symbol, color, moisture content, relative density, or consistency, soil structure, and/or mineralogy. | Comments<br>Depth of casing, drilling rate, drilling fluid loss, time, tests, and instrumentation. | Graphic Log |
|---|---|---|---|---|---|---|
| 1 | | | SP | Poorly graded Sand (SP), moist, coarse to approx. 1.5 ft bgs, dark brown 10YR 3/3. Silty Sand lense @ 1'8", moderately dense, interbedded w/ fine sand lenses to 2'2" bgs, mild organic odor, moist. rust orange mottling in sand lenses. | All drilling and sampling equipment decontaminated with alconox solution and DI water prior to start of boring? (Yes) / No | |
| 2 | | | ~~3/4~~ | | PID - 0 | |
| 3 | See below | Acetate liner SS Tube | 3.5/4 | Poorly graded sand (SP) w/ Trace coarse sand and 3/4" sub-rounded gravel clasts, yellowish brown 10YR 5/6, moist, mod. dense to 4'. 2 minor 1/4" dark gray silt lenses @ 3'4"; 3'5", notthroughout, < 10% silt. | | |
| 4 | | | | | PID - 0.1 | |
| 5 | | | | Poorly graded sand (SP) as above, trace coarse sand, < 10% silt, Strong TPH odor @ ~~3.5~~ 7 ft bgs. dark greenish gray GLEY 3/10 GY, dry 7-8 ft. mild orange mottling 5-6 ft bgs, Slightly dense. | | |
| 6 | | | + | | | |
| 7 | See below | Acetate liner SS Sleeve | 3.5/4 | | PID - 100.1 | |
| 8 | | | | | TD @ 8 ft @ 830 (refusal) | |
| 9 | | | | | | |
| 10 | | | | | | |

**Samples Collected:**

| ID | Depth | Time |
|---|---|---|
| BVIS1296S003 | 3-4 | 820 |
| BVIS1296S004 | 7-8 | 840 |
| ~~BVIS1294SP~~ | | |

*Samples were submitted for the following analyses:*
8270C SIM, D2216, SW9045, SW8015E, SW8015P, and SW8260B

PN: 476119.01.02

CH2MHILL

# SOIL BORING LOG

PAGE: 1 OF 1

Boring ID: BVBS1297
PROJECT NAME: CH-505 Bioventing Treatability Study
LOCATION: Bravo Target Treatment Zone SSFL Ventura County, CA
Northeast of Bravo Test Stand 1, in the Bravo Skim Pond
DRILLING CONTRACTOR: Environmental Support Technologies
OC/GROUND ELEVATION: Unavailable at TOD
GROUND ELEVATION: Unavailable at TOD

START DATE/TIME: 3/3/15 1250
END DATE/TIME: 3/3/15 1305
LOGGER: J. Freed
DRILLING EQUIPMENT: Geoprobe GH-40
BORING DIAMETER: 2 1/4"
TOTAL DEPTH: 8
SWL: N/A

| Depth (ft) | Sample ID/ TYPE | Sample Interval | Recovery (ft/ft) | Soil Description<br>Soil name, uscs group symbol, color, moisture content, relative density, or consistency, soil structure, and/or mineralogy. | Comments<br>Depth of casing, drilling rate, drilling fluid loss, time, tests, and instrumentation. | Graphic Log |
|---|---|---|---|---|---|---|
| 1 | | | | Poorly graded Sand (SP), dark brown 10YR 3/3, moist, soft. Sand is fine. Decrease in moisture @ 1 ft bgs, < 10% silt overall. Sandy silt lens @ 2.5 ft (2" thick), dark brown and orange fine laminations, moist. Similar lens @ 3' bgs (1" thick), ~ 40% fine sand. Concrete clast @ 3.5' bgs. | All drilling and sampling equipment decontaminated with alconox solution and DI water prior to start of boring? (Yes) / No | 1 |
| 2 | | | / | | PID - 0.2 | 2 |
| 3 | | | | | | 3 |
| 4 | See below | Acetate liner S.S. Sleeve | 3 1/4" / 3/4 | Silty Sand (SM), black to blue-green = GLEY 1 grayish green 4/2, very fine sand, ~ 20% silt, TPH ODOR @ 4 - 4'6", moist. | PID - 50.7<br>PID - 133<br>very hard drilling | 4 |
| 5 | | | | | | 5 |
| 6 | | | / | Sharp transition to poorly graded Sand w/ silt (SP-SM), Dark greenish gray GLEY 1 4/1, moist, very dense, TPH ODOR decreases w/ depth, < 15% silt, fine sand, (6-8') | | 6 |
| 7 | See below | A.L. SS Sleeve | | | | 7 |
| 8 | | | / | | TD @ 8 ft @ 1305 | 8 |
| 9 | | | | | | |
| 10 | | | | | | |

**Samples Collected:**

| ID | Depth | Time |
|---|---|---|
| BVBS1297S001 | 4-5 | 1300 |
| BVBS1297S002 | 7-8 | 1310 |

*Samples were submitted for the following analyses:*
8270C SIM, D2216, SW9045, SW8015E, SW8015P, and SW8260B

PN: 476119.01.02

CH2MHILL

# SOIL BORING LOG

PAGE: 1 OF 1

Boring ID: BVBS1298
PROJECT NAME: CH-505 Bioventing Treatability Study
LOCATION: Bravo Target Treatment Zone SSFL Ventura County, CA
Northeast of Bravo Test Stand 1, in the Bravo Skim Pond
DRILLING CONTRACTOR: Environmental Support Technologies
OC/GROUND ELEVATION: Unavailable at TOD
GROUND ELEVATION: Unavailable at TOD

START DATE/TIME: 3/3/15 1225
END DATE/TIME: 3/3/15 1240
LOGGER: J. Freed
DRILLING EQUIPMENT: Geoprobe GH-40
BORING DIAMETER: 2¼"
TOTAL DEPTH: 8' SWL: N/A

| Depth (ft) | Sample ID/ TYPE | Sample Interval | Recovery (ft/ft) | Soil Description<br>Soil name, uscs group symbol, color, moisture content, relative density, or consistency, soil structure, and/or mineralogy. | Comments<br>Depth of casing, drilling rate, drilling fluid loss, time, tests, and instrumentation. | Graphic Log |
|---|---|---|---|---|---|---|
| 0 | | | | Silty Sand (SM) very dark brown 10 YR 2/2, moist, ~25% silt, fine sand, loose, soft. 0-1 ft | All drilling and sampling equipment decontaminated with alconox solution and DI water prior to start of boring? (Yes) / No | |
| 1 | | | | S. transition to poorly graded sand (SP), dark yellowish brown 3/6, moist. Alternating dark gray / orange silty sand / poorly graded sand laminations 1.5'-2'10", med dense. Large sandstone clast @ 3.5 ft, 1" diameter, weathered. | | |
| 2 | | | / | | | |
| 3 | | | | | PID - 4.8 | |
| 4 | | Acetate liner s.s. sleeve | / | Sandy silt (ML), black, massive, soft, strong TPH odor, 3'9"-4' | PID - 75 | |
| 5 | | | | | PID - 468 | |
| 6 | | | / | S. transition to poorly graded sand with silt (SP-SM), <LGT 1 dark greenish gray 4/1, dense, moist TPH odor decreases w/ depth, silt decreases w/ depth, <15% silt, sand is fine. | PID - 565 | |
| 7 | | Acetate liner s.s. sleeve | | | 29.6 (PID) | |
| 8 | | | / | | PID - 3.5 | |
| 9 | | | | | TD @ 8' (soft) @ 1240 | |
| 10 | | | | | | |

**Samples Collected:**

| ID | Depth | Time |
|---|---|---|
| BVBS1298S001 | 4-5 | 1250 |
| BVBS1298S002 | 7-8 | 1300 |

*Samples were submitted for the following analyses:*
8270C SIM, D2216, SW9045, SW8015E, SW8015P, and SW8260B

PN: 476119.01.02

# SOIL BORING / WELL LOG

CH2MHILL

PAGE: 1 OF 1

Boring/Well ID: BVBS1299

PROJECT NAME: CH-505 Bioventing Treatability Study

START DATE/TIME: 3/3/15 1030

LOCATION: Bravo Target Treatment Zone SSFL Ventura County, CA

END DATE/TIME: 3/3/15 1100

Northeast of Bravo Test Stand 1, in the Bravo Skim Pond

LOGGER: J. Freed

DRILLING CONTRACTOR: Environmental Support Technologies

DRILLING EQUIPMENT: Geoprobe 6H-40 / hand auger

OC/GROUND ELEVATION: Unavailable at TOD

BORING DIAMETER: 2¼" / 3"

GROUND ELEVATION: Unavailable at TOD

TOTAL DEPTH: 8' 3"

SWL: N/A

| Depth (ft) | Sample ID/ TYPE | Sample Interval | Recovery (ft/ft) | Soil Description: Soil name, uscs group symbol, color, moisture content, relative density, or consistency, soil structure, and/or mineralogy. | Comments: Depth of casing, drilling rate, drilling fluid loss, time, tests, and instrumentation. | Graphic Log |
|---|---|---|---|---|---|---|
| 1 | | | | Poorly graded sand (SP), wet, very dark brown 10YR 2/2, 100%, fine sand, < 10% silt, moist 0.5 – 4'. Small poorly graded sand with silt (SP-SM) lens @ 2' (2"), black / orange w/ oxidation mottling, | All drilling and sampling equipment decontaminated with alconox solution and DI water prior to start of boring? Yes / No<br>PID - 0.1 | |
| 2 | | | / | | PID - 1.4 | |
| 3 | | | | Similar lens @ 2' 7" (1"), ~ 10-15% silt, similar lens @ 3' 5" bgs. | PID - 0 | |
| 4 | | | / | Poorly graded sand (SP), moist, predominantly fine, orange mottled oxidation through 4'. dark yellowish brown 10 YR 4/6, 100%. Black, sandy lean clay lens @ 4' (1" thick), | | |
| 5 | See below | Acetate liner S.S. sleeve | | soft, moldable, ~ 20% fine sand. Similar lens @ 4.5', and 4'9" to 5'2", massive. | PID - 48.6 | |
| 6 | | | / | 4'9" to 5'2" is silty sand, very fine, massive, TPH odor ~ 40% silt, black 2.5Y, 5/1. | Becomes stiff @ 6' | |
| 7 | See below | Acetate liner S.S. sleeve | | Sharp transition to poorly graded sand (SP), fine, dense, GLEY 1 3/1, dark greenish gray, predominantly fine, < 5% silt. (5' 3" to 8') | | |
| 8 | | | / | | TD @ 8'3" @ 11 am refusal / bedrock | |
| 9 | | | | | | |
| 10 | | | | | | |

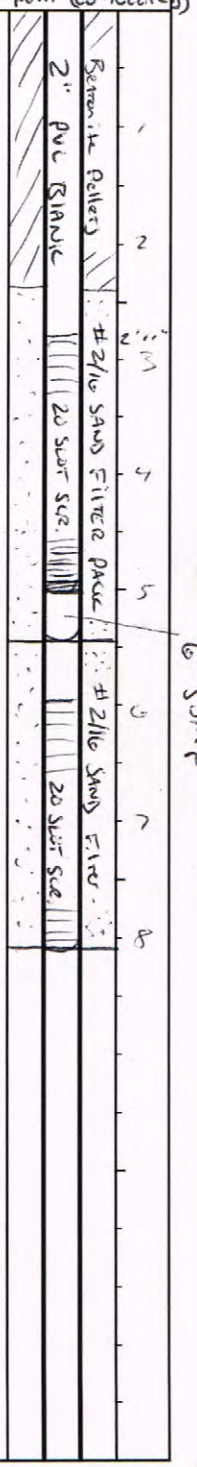
**Samples Collected:**

| ID | Depth | Time |
|---|---|---|
| BVBS1299S001 | 4.0-5.5 | 1040 |
| BVBS1299S002 | 7-8 | 1120 |

*Samples were submitted for the following analyses:*

8270C SIM, D2216, SW9045, SW8015E, SW8015P, and SW8260B

**Well Construction Diagram** (Constructed as a point (co-located))




PN: 476119.01.02

CH2MHILL MS MSD

# SOIL BORING LOG

PAGE: 1 OF 1

Boring ID: BV3S1293 (S005 / S006)
PROJECT NAME: CH-505 Bioventing Treatability Study
LOCATION: Bravo Target Treatment Zone SSFL Ventura County, CA
Northeast of Bravo Test Stand 1, in the Bravo Skim Pond
DRILLING CONTRACTOR: Environmental Support Technologies
OC/GROUND ELEVATION: Unavailable at TOD
GROUND ELEVATION: Unavailable at TOD

START DATE/TIME: 4-10-15 745
END DATE/TIME: 4-10-15 815
LOGGER: J. Freed
DRILLING EQUIPMENT: Geoprobe GH-40
BORING DIAMETER: 2 1/4"
TOTAL DEPTH: 8' SWL: N/A

| Depth (ft) | Sample ID/ TYPE | Sample Interval | Recovery (ft/ft) | Soil Description<br>Soil name, uscs group symbol, color, moisture content, relative density, or consistency, soil structure, and/or mineralogy. | Comments<br>Depth of casing, drilling rate, drilling fluid loss, time, tests, and instrumentation. | Graphic Log |
|---|---|---|---|---|---|---|
| 1 | | | | Poorly graded sand w/ silt (SP-SM), dark yellowish brown 10YR 4/6, moist, predom. fine, minor oxidation @ 1.4', 1.9', and 2.3 ft. Dense silty sand lens @ 2.2 ft and 2.8 ft. TPH odor @ 3.5-4 ft, becomes dark grayish brown. | All drilling and sampling equipment decontaminated with alconox solution and DI water prior to start of boring? (Yes) / No | |
| 2 | | | 1 | | PID - 0.2 @ 1.4' | |
| 3 | See below | Acetate liner | | | | |
| 4 | | S.S. Sleeve | 3.8/4 | | PID - 0.6 @ ~3.5-4' | |
| 5 | | | | Poorly graded sand (SP), yellowish brown 10YR 5/8, wet w/ no standing water, oxidized from 4.6-5.2 ft, predom. fine grained, trace silt. Dense from 6.8 ft. Silty sand lens @ 6.3, mild TPH odor, very dark grayish green GLEY 1 3/2, fine sand ~ 15% silt. | | |
| 6 | | | 1 | | | |
| 7 | See below | Acetate liner | | @ 7 ft - Poorly graded sand (SP), grayish green GLEY 1 5/2, predominantly fine medium dense, mild TPH odor, not shiny, moist, PID - 0.0. | PID - 0.1 @ 6' | |
| 8 | | S.S. Sleeve | 4/4 | | PID - 1.6 @ 7.5' | |
| 9 | | | | | TD @ 8' 815 | |
| 10 | | | | | **Samples Collected:**<br>ID / Depth / Time<br>BV3S1293S005 3-4' 750<br>BV3S1293S005 MS<br>BV3S1293S005 SD<br>BV3S1293S006 7-8 830 | |

*Samples were submitted for the following analyses:*
8270C SIM, D2216, SW9045, SW8015E, SW8015P, and SW8260B

PN: 476119.01.02

CH2MHILL (DW)

# SOIL BORING LOG

PAGE: 1 OF 1

Boring ID: BV3S1294 (S005 ; S006)
PROJECT NAME: CH-505 Bioventing Treatability Study
LOCATION: Bravo Target Treatment Zone SSFL Ventura County, CA
Northeast of Bravo Test Stand 1, in the Bravo Skim Pond
DRILLING CONTRACTOR: Environmental Support Technologies
OC/GROUND ELEVATION: Unavailable at TOD
GROUND ELEVATION: Unavailable at TOD

START DATE/TIME: 4-10-15 1140
END DATE/TIME: 4-10-15 1200
LOGGER: J. Freed
DRILLING EQUIPMENT: Geoprobe 6611-40
BORING DIAMETER: 2 1/4"
TOTAL DEPTH: 8
SWL: N/A

| Depth (ft) | Sample ID/ TYPE | Sample Interval | Recovery (ft/ft) | Soil Description<br>Soil name, uscs group symbol, color, moisture content, relative density, or consistency, soil structure, and/or mineralogy. | Comments<br>Depth of casing, drilling rate, drilling fluid loss, time, tests, and instrumentation. | Graphic Log |
|---|---|---|---|---|---|---|
| 1 | | | | Poorly graded Sand with silt (SP-SM), dry, loose, brown 10YR 4/3, fine sand ~ 10-15% silt. 0-0.9 | All drilling and sampling equipment decontaminated with alconox solution and DI water prior to start of boring? Yes / No | |
| | | | | well graded Sand (SW), brown 10YR 4/3, dry, loose. 0.9 - 1.2 | | |
| 2 | See below | Acetate liner | 1/ | 1.2 - 2' - Silty Sand (SM), dry, fine sand, ~ 30-40% silt, dense, orange mottling, yellowish brown 10YR 5/6. | PID - 0.0 | |
| 3 | | | | 2 - 5 ft - Poorly graded Sand (SP), medium dense, yellowish brown 10YR 5/6. Silty Sand lens @ 2.6-2.8 ft, dark brown 10YR 3/3, no odor | PID - 0.2 | |
| 4 | | SS. sleeve | 4/4 | | | |
| 5 | | | | Silty Sand (SM), moist, black, glistens in sunlight, strong TPH odor, massive, 5.0 ft to 6.5, Transitions to greenish gray 10Y 5/1 to ~~7.8 ft, end~~ 8 ft. | PID - 81.4 @ 5.5' - 7.5 | |
| 6 | | | 1/ | | | |
| | See below | Acetate liner | | | | |
| 7 | | S.S Sleeve | | | | |
| 8 | | | 4/4 | | TD @ 8' 5/1 | |
| 9 | | | | | | |
| 10 | | | | | | |

**Samples Collected:**

| ID | Depth | Time |
|---|---|---|
| BV3S1294S005 | 2-4 | 1200 |
| BV3S1294D005 | 2-4 | 1200 |
| BV3S1294S006 | 6-7 | 1215 |

*Samples were submitted for the following analyses:*
8270C SIM, D2216, SW9045, SW8015E, SW8015P, and SW8260B

PN: 476119.01.02

CH2MHILL (SPL I)

# SOIL BORING LOG

PAGE: 1 OF 1

Boring ID: BVSS1295 (5005 ; 5006)
PROJECT NAME: CH-505 Bioventing Treatability Study
LOCATION: Bravo Target Treatment Zone SSFL Ventura County, CA
Northeast of Bravo Test Stand 1, in the Bravo Skim Pond
DRILLING CONTRACTOR: Environmental Support Technologies
OC/GROUND ELEVATION: Unavailable at TOD
GROUND ELEVATION: Unavailable at TOD

START DATE/TIME: 4-10-15 1035
END DATE/TIME: 4-10-15 1050
LOGGER: J. Freed
DRILLING EQUIPMENT: Geoprobe 6H-40
BORING DIAMETER: 2 1/4"
TOTAL DEPTH: 8 SWL: N/A

| Depth (ft) | Sample ID/ TYPE | Sample Interval | Recovery (ft/ft) | Soil Description<br>Soil name, uscs group symbol, color, moisture content, relative density, or consistency, soil structure, and/or mineralogy. | Comments<br>Depth of casing, drilling rate, drilling fluid loss, time, tests, and instrumentation. | Graphic Log |
|---|---|---|---|---|---|---|
| 1 | | | | 0-1 ft - Poorly graded Sand w/ Silt (SP-SM), dry, loose, Fine Sand, ~ 10% silt | All drilling and sampling equipment decontaminated with alconox solution and DI water prior to start of boring? (Yes) / No | |
| 2 | | | 1 | S. transition to poorly graded sand (SP), moist, predom. fine sand, < 10% silt, visual oxidation 1.4 TO 2.2 ft, no odor, Silty Sand (SM) lens @ 2.1-2.2 ft and @ 3.2 ft (1"), very dark gray 10YR 3/1, moist. | | |
| 3 | See below | Acetate Sleeve | | | | |
| 4 | | S.S. Sleeve | 4/4 | well graded sand w/ silt (SW-SM), moist, 10Y 5/1 Clef 2, contains ~ 5% angular pea gravel, Possible fill, mild TPH odor 5.5 TO 8 ft, minor oxidation 6.7 TO 7.3 ft, moist. | PID - 8.5 ppm @ 4 ft | |
| 5 | | | | | | |
| 6 | See below | Acetate Sleeve | 1 | | PID - 29.8 ppm @ 5.5-6 | |
| 7 | | | | | | |
| 8 | | S.S. Sleeve | 4/4 | | PID - 2.2 ppm @ 8' | |
| 9 | | | | | TD @ 8' 5/5 | |
| 10 | | | | | **Samples Collected:**<br>ID / Depth / Time<br>BVSS1295S005 2.5-4 1040<br>BVSS1295S005SP 2.5-4 1040<br>BVSS1295S006 5.5-8 1100 | |

*Samples were submitted for the following analyses:*
8270C SIM, D2216, SW9045, SW8015E, SW8015P, and SW8260B

PN: 476119.01.02

CH2MHILL

# SOIL BORING LOG

PAGE: 1 OF 1

Boring ID: BVBS1296 (S005 & S006)
PROJECT NAME: CH-505 Bioventing Treatability Study
LOCATION: Bravo Target Treatment Zone SSFL Ventura County, CA
Northeast of Bravo Test Stand 1, in the Bravo Skim Pond
DRILLING CONTRACTOR: Environmental Support Technologies
OC/GROUND ELEVATION: Unavailable at TOD
GROUND ELEVATION: Unavailable at TOD

START DATE/TIME: 4-10-15 850
END DATE/TIME: 4-10-15 910
LOGGER: J. Freed
DRILLING EQUIPMENT: GeoProbe CH-40
BORING DIAMETER: 2 1/4"
TOTAL DEPTH: 8
SWL: N/A

| Depth (ft) | Sample ID/ TYPE | Sample Interval | Recovery (ft/ft) | Soil Description: Soil name, uscs group symbol, color, moisture content, relative density, or consistency, soil structure, and/or mineralogy. | Comments: Depth of casing, drilling rate, drilling fluid loss, time, tests, and instrumentation. | Graphic Log |
|---|---|---|---|---|---|---|
| 1 | | | | poorly graded sand w/ silt (SP-SM), predom. fine sand, dry, loose, dark yellowish brown 10YR 4/4. | All drilling and sampling equipment decontaminated with alconox solution and DI water prior to start of boring? (Yes) / No | |
| 2 | | | / | poorly graded sand (SP), fine, oxidized to 1.9 ft, loose, no odor, dry. | PID - 0.0 | |
| 3 | | Acetate liner | | @ 2' - poorly graded sand w/ silt (SP-SM), dense, moist, mottled oxidation, no odor. Brown 10YR 4/3. | | |
| 4 | See below | S.S. sleeve | 4/4 | @ 2.5' - poorly graded sand (SP), oxidized, predom fine, moist, dark yellowish brown 10YR 4/4. Silty sand lns @ 3.2 ft (1"), mild odor, dull. Coarse gravel clast @ 3.5 ft. Becomes dark gray to black w/ orange oxidized mottling from 3.5 - 4 ft, strong TPH odor, crumbles w/ mild hand pressure, slightly moist. SI continues to 8'. Bluish mottling @ 4.5 - 6.5, mixed w/ oxidized portions. Becomes dark greenish gray 5GY 4/1, 6.5 - 8 ft. mild petroleum odor, dense, moist, very dense 7.5 - 8 ft. | PID = 1.4 ppm @ 3.5 ft<br>PID - 15.8 ppm @ 4'<br>PID - 0.7 @ 4.5 & 5.5' | |
| 5 | | | | | | |
| 6 | | | / | | | |
| 7 | | Acetate liner | | | PID - 1.2 @ 7'<br>* crumbles from 7-8', partially cemented | |
| 8 | See below | S.S. sleeve | 4 3/4 | | refusal @ 8' bgs | |
| 9 | | | | | | |
| 10 | | | | | | |

**Samples Collected:**

| ID | Depth | Time |
|---|---|---|
| BVBS1296S005 | 3-4 | 900 |
| BVBS1296S006 | 7-8 | 930 |

*Samples were submitted for the following analyses:*
8270C SIM, D2216, SW9045, SW8015E, SW8015P, and SW8260B

PN: 476119.01.02

CH2MHILL

# SOIL BORING LOG

PAGE: 1 OF 1

Boring ID: BVBS1297(5003 + 5004)
PROJECT NAME: CH-505 Bioventing Treatability Study
LOCATION: Bravo Target Treatment Zone SSFL Ventura County, CA
Northeast of Bravo Test Stand 1, in the Bravo Skim Pond
DRILLING CONTRACTOR: Environmental Support Technologies
OC/GROUND ELEVATION: Unavailable at TOD
GROUND ELEVATION: Unavailable at TOD

START DATE/TIME: 4-10-15 940
END DATE/TIME: 4-10-15 1000
LOGGER: J. Freed
DRILLING EQUIPMENT: Geoprobe GH-40
BORING DIAMETER: 2 1/4"
TOTAL DEPTH: 8' SWL: N/A

| Depth (ft) | Sample ID/ TYPE | Sample Interval | Recovery (ft/ft) | Soil Description<br>Soil name, uscs group symbol, color, moisture content, relative density, or consistency, soil structure, and/or mineralogy. | Comments<br>Depth of casing, drilling rate, drilling fluid loss, time, tests, and instrumentation. | Graphic Log |
|---|---|---|---|---|---|---|
| 1 | | | | Poorly graded sand w/ silt (SP-SM), fine, dry, dark yellowish brown 10YR 4/4, loose. 0-1.8'. | All drilling and sampling equipment decontaminated with alconox solution and DI water prior to start of boring? (Yes) / No | |
| 2 | | | 1 | Poorly graded sand (SP), moist, medium, fine sand, oxidized mottling 1.8-2.6', dark yellow brown 10YR 4/4 to yellow brown 10YR 5/8. Silty sand lenses @ 2.3-2.5 ft, 3.0-3.1 ft, 3.6-3.7, dense, moist, oxidized mottling. | | |
| 3 | | | | | | |
| 4 | See below | Acetate liner<br>S.S. sleeve | 3/4 | Sharp transition to black poorly graded sand w/ silt (SP-SM), moist, mild oxidized mottling strong TPH odor, predominately fine sand, dull appearance, ends @ 4.8 ft, and becomes bluish gray, poorly graded sand (SP), medium dense, moist mild petroleum odor, greenish gray (5GY 2 6/1, Becomes greenish gray (5GY 2 5/1 (10Y) from 5.5-6.1 ft. (Interval between previous description) | PID @ 4.5 - 4.6 ppm to 59.2 @ | |
| 5 | | | | | | |
| 6 | | | 1 | | PID - 1.2-2.8 from 5-8' | |
| 7 | See below | Acetate liner<br>S.S. sleeve | | | | |
| 8 | | | 5/8 | | very Hard @ 8' bgs<br>TD @ 8' bgs | |
| 9 | | | | | | |
| 10 | | | | | | |

**Samples Collected:**

| ID | Depth | Time |
|---|---|---|
| BVBS1297S003 | 4 - 5 | 950 |
| BVBS1297S004 | 7-8 | 1015 |

*Samples were submitted for the following analyses:*
8270C SIM, D2216, SW9045, SW8015E, SW8015P, and SW8260B

PN: 476119.01.02

CH2MHILL

# SOIL BORING LOG

PAGE: 1 OF 1

Boring ID: BVTSS1298 (SS003 + SS004)
PROJECT NAME: CH-505 Bioventing Treatability Study
LOCATION: Bravo Target Treatment Zone SSFL Ventura County, CA
Northeast of Bravo Test Stand 1, in the Bravo Skim Pond
DRILLING CONTRACTOR: Environmental Support Technologies
DRILLING EQUIPMENT: Geoprobe Gill-40
TOC/GROUND ELEVATION: Unavailable at TOD
BORING DIAMETER: 2 1/2"
GROUND ELEVATION: Unavailable at TOD
TOTAL DEPTH: 8'
SWL: N/A

START DATE/TIME: 4-10-15 1215
END DATE/TIME: 4-10-15 1240
LOGGER: J. Freed

| Depth (ft) | Sample ID/ TYPE | Sample Interval | Recovery (ft/ft) | Soil Description<br>Soil name, uscs group symbol, color, moisture content, relative density, or consistency, soil structure, and/or mineralogy. | Comments<br>Depth of casing, drilling rate, drilling fluid loss, time, tests, and instrumentation. | Graphic Log |
|---|---|---|---|---|---|---|
| 1 | | | | 0-1.7 ft - Poorly graded Sand with Silt (SP-SM), dark yellow brown 10YR 4/4, dry, fine Sand. | All drilling and sampling equipment decontaminated with alconox solution and DI water prior to start of boring? Yes / No | |
| 2 | | | 1 | Poorly graded Sand (SP), dry to 3.1 ft, predominantly fine Sand. yellowish brown 10YR 5/6. Silty Sand lens @ 3.1 - 3.2 ft, dark brown 10YR 3/3, also @ 3.5 ft. | | |
| 3 | | | | | PID - 0 (3 - 3.5') | |
| 4 | See below | Acetate liner<br>S.S. Sleeve | 4/4 | (@ 4.5 ft)<br>Sharp transition to Silty Sand (SM), black, strong TPH odor, black, non-moldable, massive, ~ 25% Silt, moist. | PID - 69.9 @ 4.5 ft. | |
| 5 | | | | Poorly graded Sand (SP), dry, loose, fine Sand dark yellowish brown 10YR 4/4, dry, no odor. | | |
| 6 | | | 1 | 5 - ~~5.5 ft~~ 6 ft. | | |
| 7 | See below | Acetate liner<br>S.S. Sleeve | | 45° transition to Silty Sand, (SM), dense, black 6-6.7 ft, moist, ~ 25% Silt, fine Sand, non-moldable, becomes very dark greenish gray 10Y 3/1 GLEY1, mild odor compared to the black interval. | PID - 13.8 | |
| 8 | | | 4/4 | | PID - 1.5<br>TD @ 8' bgs | |
| 9 | | | | | | |
| 10 | | | | | | |

**Samples Collected:**

| ID | Depth | Time |
|---|---|---|
| BVTSS1298500 3 | 4-5 | 1240 |
| | 6-8 | |
| BVTSS1298500 4 | ~~7-8~~ | 1300 |

*Samples were submitted for the following analyses:*
8270C SIM, D2216, SW9045, SW8015E, SW8015P, and SW8260B

PN: 476119.01.02

CH2MHILL

# SOIL BORING LOG

PAGE: 1 OF 1

Boring ID: BVBS1299 (Soil & Soil)
PROJECT NAME: CH-505 Bioventing Treatability Study
LOCATION: Bravo Target Treatment Zone SSFL Ventura County, CA
Northeast of Bravo Test Stand 1, in the Bravo Skim Pond
DRILLING CONTRACTOR: Environmental Support Technologies
OC/GROUND ELEVATION: Unavailable at TOD
GROUND ELEVATION: Unavailable at TOD

START DATE/TIME: 4-10-15 1110
END DATE/TIME: 4-10-15 1130
LOGGER: J. Freed
DRILLING EQUIPMENT: Geoprobe GH-40
BORING DIAMETER: 2 1/4"
TOTAL DEPTH: 8 SWL: N/A

| Depth (ft) | Sample ID/ TYPE | Sample Interval | Recovery (ft/ft) | Soil Description<br>Soil name, uscs group symbol, color, moisture content, relative density, or consistency, soil structure, and/or mineralogy. | Comments<br>Depth of casing, drilling rate, drilling fluid loss, time, tests, and instrumentation. | Graphic Log |
|---|---|---|---|---|---|---|
| 1 | | | | Poorly graded Sand w/ Silt (SP-SM), dry, loose, 10YR 4/4 dark yellowish brown, fine sand. | All drilling and sampling equipment decontaminated with alconox solution and DI water prior to start of boring? (Yes) / No | |
| 2 | | | 1 | Sharp transition to poorly graded Sand @ 1.9' bgs, moist, fine sand, < 10% silt, oxidized mottling @ 2.4 - 3.1 ft bgs. | | |
| 3 | | | | Loose / Silty Sand (SM) lenses @ 3.3, 3.5, 3.7 and 3.8 ft, all ~ 1/2" thick, dark brown to black in color, moist. | PID - 0.4 @ 3.5 | |
| 4 | | | 4/4 | | | |
| 5 | See below | Acetate liner<br>S.S. Sleeve | | Transition @ 4' to Silty Sand, (SM), black, strong odor, moldable. Contains ~ 60% sand, fine, moist. | PID - 21.7 @ 4-4.5' | |
| 6 | | | 1 | S: transition to well graded sand (SW) @ 4.8 ft bgs, dense, moist. TPH odor to end of core. 10Y 4/1 Gray 2, to end of boring. | | |
| 7 | See below | Acetate liner<br>S.S. Sleeve | | | PID - 5.3 @ 7.5' - 8' | |
| 8 | | | 4/4 | | TD @ 8' bgs | |
| 9 | | | | | | |
| 10 | | | | | | |

**Samples Collected:**

| ID | Depth | Time |
|---|---|---|
| BVBS1299S003 | 4-5.5' | 1125 |
| BVBS1299S004 | 7-8 | 1140 |

*Samples were submitted for the following analyses:*
8270C SIM, D2216, SW9045, SW8015E, SW8015P, and SW8260B

PN: 476119.01.02

APPENDIX E-2

**Analytical Data 2015 Biovent Sampling**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | SL | Units | Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| GS | SVP-6b | BVSVP6SVS001 | N | 6 Feb 2015 | 6 - 8 | TO15 | OTHER | C4 as n-Butane | 38 U | | 38 | | µg/m3 | | NC |
| GS | SVP-6b | BVSVP6SVS001 | N | 6 Feb 2015 | 6 - 8 | TO15 | OTHER | C5 as n-Pentane | 38 U | | 38 | | µg/m3 | | NC |
| GS | SVP-6b | BVSVP6SVS001 | N | 6 Feb 2015 | 6 - 8 | TO15 | OTHER | C7 as n-Heptane | 38 U | | 38 | | µg/m3 | | NC |
| GS | SVP-6b | BVSVP6SVS001 | N | 6 Feb 2015 | 6 - 8 | TO15 | OTHER | Dodecane | 38 U | | 38 | | µg/m3 | | NC |
| GS | SVP-6b | BVSVP6SVS001 | N | 6 Feb 2015 | 6 - 8 | TO15 | OTHER | n-Decane | 38 U | | 38 | | µg/m3 | | NC |
| GS | SVP-6b | BVSVP6SVS001 | N | 6 Feb 2015 | 6 - 8 | TO15 | OTHER | n-Hexane | 38 U | | 38 | | µg/m3 | | NC |
| GS | SVP-6b | BVSVP6SVS001 | N | 6 Feb 2015 | 6 - 8 | TO15 | OTHER | Nonane | 38 U | | 38 | | µg/m3 | | NC |
| GS | SVP-6b | BVSVP6SVS001 | N | 6 Feb 2015 | 6 - 8 | TO15 | OTHER | Undecane | 38 U | | 38 | | µg/m3 | | NC |
| GS | SVP-6b | BVSVP6SVS001 | N | 6 Feb 2015 | 6 - 8 | TO15 | VOC | n-Octane | 38 U | | 38 | | µg/m3 | | NC |
| GS | SVP-6b | BVSVP6SVS001 | N | 6 Feb 2015 | 6 - 8 | TO15 | VOC | Propane | 38 U | | 38 | | µg/m3 | | NC |
| GS | SVP-6b | BVSVP6SVD001 | FD | 6 Feb 2015 | 6 - 8 | TO15 | OTHER | C4 as n-Butane | 39 U | | 39 | | µg/m3 | | NC |
| GS | SVP-6b | BVSVP6SVD001 | FD | 6 Feb 2015 | 6 - 8 | TO15 | OTHER | C5 as n-Pentane | 39 U | | 39 | | µg/m3 | | NC |
| GS | SVP-6b | BVSVP6SVD001 | FD | 6 Feb 2015 | 6 - 8 | TO15 | OTHER | C7 as n-Heptane | 39 U | | 39 | | µg/m3 | | NC |
| GS | SVP-6b | BVSVP6SVD001 | FD | 6 Feb 2015 | 6 - 8 | TO15 | OTHER | Dodecane | 39 U | | 39 | | µg/m3 | | NC |
| GS | SVP-6b | BVSVP6SVD001 | FD | 6 Feb 2015 | 6 - 8 | TO15 | OTHER | n-Decane | 39 U | | 39 | | µg/m3 | | NC |
| GS | SVP-6b | BVSVP6SVD001 | FD | 6 Feb 2015 | 6 - 8 | TO15 | OTHER | n-Hexane | 39 U | | 39 | | µg/m3 | | NC |
| GS | SVP-6b | BVSVP6SVD001 | FD | 6 Feb 2015 | 6 - 8 | TO15 | OTHER | Nonane | 39 U | | 39 | | µg/m3 | | NC |
| GS | SVP-6b | BVSVP6SVD001 | FD | 6 Feb 2015 | 6 - 8 | TO15 | OTHER | Undecane | 39 U | | 39 | | µg/m3 | | NC |
| GS | SVP-6b | BVSVP6SVD001 | FD | 6 Feb 2015 | 6 - 8 | TO15 | VOC | n-Octane | 39 U | | 39 | | µg/m3 | | NC |
| GS | SVP-6b | BVSVP6SVD001 | FD | 6 Feb 2015 | 6 - 8 | TO15 | VOC | Propane | 39 U | | 39 | | µg/m3 | | NC |
| GS | SVP-6b | BVSVP6SVS002 | N | 13 Apr 2015 | 6 - 8 | TO15 | OTHER | C4 as n-Butane | 1000 U | | 1000 | | µg/m3 | | NC |
| GS | SVP-6b | BVSVP6SVS002 | N | 13 Apr 2015 | 6 - 8 | TO15 | OTHER | C5 as n-Pentane | 1000 U | | 1000 | | µg/m3 | | NC |
| GS | SVP-6b | BVSVP6SVS002 | N | 13 Apr 2015 | 6 - 8 | TO15 | OTHER | C7 as n-Heptane | 1400 J | | 1000 | | µg/m3 | | NC |
| GS | SVP-6b | BVSVP6SVS002 | N | 13 Apr 2015 | 6 - 8 | TO15 | OTHER | Dodecane | 15000 = | | 1000 | | µg/m3 | | NC |
| GS | SVP-6b | BVSVP6SVS002 | N | 13 Apr 2015 | 6 - 8 | TO15 | OTHER | n-Decane | 57000 J | | 1000 | | µg/m3 | | NC |
| GS | SVP-6b | BVSVP6SVS002 | N | 13 Apr 2015 | 6 - 8 | TO15 | OTHER | n-Hexane | 1000 U | | 1000 | | µg/m3 | | NC |
| GS | SVP-6b | BVSVP6SVS002 | N | 13 Apr 2015 | 6 - 8 | TO15 | OTHER | Nonane | 35000 J | | 1000 | | µg/m3 | | NC |
| GS | SVP-6b | BVSVP6SVS002 | N | 13 Apr 2015 | 6 - 8 | TO15 | OTHER | Undecane | 43000 = | | 1000 | | µg/m3 | | NC |
| GS | SVP-6b | BVSVP6SVS002 | N | 13 Apr 2015 | 6 - 8 | TO15 | VOC | 1,1,1,2-Tetrachloroethane | 51 U | 24 | 51 | | µg/m3 | | NC |
| GS | SVP-6b | BVSVP6SVS002 | N | 13 Apr 2015 | 6 - 8 | TO15 | VOC | 1,1,1-Trichloroethane | 51 U | 17 | 51 | | µg/m3 | | NC |
| GS | SVP-6b | BVSVP6SVS002 | N | 13 Apr 2015 | 6 - 8 | TO15 | VOC | 1,1,2,2-Tetrachloroethane | 51 U | 15 | 51 | | µg/m3 | | NC |
| GS | SVP-6b | BVSVP6SVS002 | N | 13 Apr 2015 | 6 - 8 | TO15 | VOC | 1,1,2-Trichloro-1,2,2-trifluoroethane | 51 U | 17 | 51 | | µg/m3 | | NC |
| GS | SVP-6b | BVSVP6SVS002 | N | 13 Apr 2015 | 6 - 8 | TO15 | VOC | 1,1,2-Trichloroethane | 51 U | 16 | 51 | | µg/m3 | | NC |
| GS | SVP-6b | BVSVP6SVS002 | N | 13 Apr 2015 | 6 - 8 | TO15 | VOC | 1,1-Dichloroethane | 51 U | 16 | 51 | | µg/m3 | | NC |
| GS | SVP-6b | BVSVP6SVS002 | N | 13 Apr 2015 | 6 - 8 | TO15 | VOC | 1,1-Dichloroethene | 51 U | 17 | 51 | | µg/m3 | | NC |
| GS | SVP-6b | BVSVP6SVS002 | N | 13 Apr 2015 | 6 - 8 | TO15 | VOC | 1,2-Dichloroethane | 51 U | 16 | 51 | | µg/m3 | | NC |

APPENDIX E-2

**Analytical Data 2015 Biovent Sampling**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | SL | Units | Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| GS | SVP-6b | BVSVP6SVS002 | N | 13 Apr 2015 | 6 - 8 | TO15 | VOC | Benzene | 51 U | 16 | 51 | | µg/m3 | | NC |
| GS | SVP-6b | BVSVP6SVS002 | N | 13 Apr 2015 | 6 - 8 | TO15 | VOC | Carbon tetrachloride | 51 U | 15 | 51 | | µg/m3 | | NC |
| GS | SVP-6b | BVSVP6SVS002 | N | 13 Apr 2015 | 6 - 8 | TO15 | VOC | Chloroethane | 51 U | 17 | 51 | | µg/m3 | | NC |
| GS | SVP-6b | BVSVP6SVS002 | N | 13 Apr 2015 | 6 - 8 | TO15 | VOC | cis-1,2-Dichloroethene | 51 U | 16 | 51 | | µg/m3 | | NC |
| GS | SVP-6b | BVSVP6SVS002 | N | 13 Apr 2015 | 6 - 8 | TO15 | VOC | Dichlorodifluoromethane | 51 U | 17 | 51 | | µg/m3 | | NC |
| GS | SVP-6b | BVSVP6SVS002 | N | 13 Apr 2015 | 6 - 8 | TO15 | VOC | Ethylbenzene | 51 U | 16 | 51 | | µg/m3 | | NC |
| GS | SVP-6b | BVSVP6SVS002 | N | 13 Apr 2015 | 6 - 8 | TO15 | VOC | m,p-Xylenes | 100 U | 31 | 100 | | µg/m3 | | NC |
| GS | SVP-6b | BVSVP6SVS002 | N | 13 Apr 2015 | 6 - 8 | TO15 | VOC | Methylene chloride | 51 U | 17 | 51 | | µg/m3 | | NC |
| GS | SVP-6b | BVSVP6SVS002 | N | 13 Apr 2015 | 6 - 8 | TO15 | VOC | n-Octane | 12000 J | | 1000 | | µg/m3 | | NC |
| GS | SVP-6b | BVSVP6SVS002 | N | 13 Apr 2015 | 6 - 8 | TO15 | VOC | o-Xylene | 51 U | 15 | 51 | | µg/m3 | | NC |
| GS | SVP-6b | BVSVP6SVS002 | N | 13 Apr 2015 | 6 - 8 | TO15 | VOC | Propane | 1000 U | | 1000 | | µg/m3 | | NC |
| GS | SVP-6b | BVSVP6SVS002 | N | 13 Apr 2015 | 6 - 8 | TO15 | VOC | Tetrachloroethene | 51 U | 14 | 51 | | µg/m3 | | NC |
| GS | SVP-6b | BVSVP6SVS002 | N | 13 Apr 2015 | 6 - 8 | TO15 | VOC | Toluene | 51 U | 17 | 51 | | µg/m3 | | NC |
| GS | SVP-6b | BVSVP6SVS002 | N | 13 Apr 2015 | 6 - 8 | TO15 | VOC | trans-1,2-Dichloroethene | 51 U | 20 | 51 | | µg/m3 | | NC |
| GS | SVP-6b | BVSVP6SVS002 | N | 13 Apr 2015 | 6 - 8 | TO15 | VOC | Trichloroethene | 51 U | 14 | 51 | | µg/m3 | | NC |
| GS | SVP-6b | BVSVP6SVS002 | N | 13 Apr 2015 | 6 - 8 | TO15 | VOC | Trichlorofluoromethane | 51 U | 17 | 51 | | µg/m3 | | NC |
| GS | SVP-6b | BVSVP6SVS002 | N | 13 Apr 2015 | 6 - 8 | TO15 | VOC | Trichloromethane (Chloroform) | 51 U | 17 | 51 | | µg/m3 | | NC |
| GS | SVP-6b | BVSVP6SVS002 | N | 13 Apr 2015 | 6 - 8 | TO15 | VOC | Vinyl chloride | 51 U | 17 | 51 | | µg/m3 | | NC |
| GS | SVP-6b | BVSVP6SVD002 | FD | 13 Apr 2015 | 6 - 8 | TO15 | OTHER | C4 as n-Butane | 530 U | | 530 | | µg/m3 | | NC |
| GS | SVP-6b | BVSVP6SVD002 | FD | 13 Apr 2015 | 6 - 8 | TO15 | OTHER | C5 as n-Pentane | 530 U | | 530 | | µg/m3 | | NC |
| GS | SVP-6b | BVSVP6SVD002 | FD | 13 Apr 2015 | 6 - 8 | TO15 | OTHER | C7 as n-Heptane | 570 J | | 530 | | µg/m3 | | NC |
| GS | SVP-6b | BVSVP6SVD002 | FD | 13 Apr 2015 | 6 - 8 | TO15 | OTHER | Dodecane | 17000 = | | 530 | | µg/m3 | | NC |
| GS | SVP-6b | BVSVP6SVD002 | FD | 13 Apr 2015 | 6 - 8 | TO15 | OTHER | n-Decane | 29000 J | | 530 | | µg/m3 | | NC |
| GS | SVP-6b | BVSVP6SVD002 | FD | 13 Apr 2015 | 6 - 8 | TO15 | OTHER | n-Hexane | 530 U | | 530 | | µg/m3 | | NC |
| GS | SVP-6b | BVSVP6SVD002 | FD | 13 Apr 2015 | 6 - 8 | TO15 | OTHER | Nonane | 17000 J | | 530 | | µg/m3 | | NC |
| GS | SVP-6b | BVSVP6SVD002 | FD | 13 Apr 2015 | 6 - 8 | TO15 | OTHER | Undecane | 37000 = | | 530 | | µg/m3 | | NC |
| GS | SVP-6b | BVSVP6SVD002 | FD | 13 Apr 2015 | 6 - 8 | TO15 | VOC | 1,1,1,2-Tetrachloroethane | 27 U | 12 | 27 | | µg/m3 | | NC |
| GS | SVP-6b | BVSVP6SVD002 | FD | 13 Apr 2015 | 6 - 8 | TO15 | VOC | 1,1,1-Trichloroethane | 27 U | 9 | 27 | | µg/m3 | | NC |
| GS | SVP-6b | BVSVP6SVD002 | FD | 13 Apr 2015 | 6 - 8 | TO15 | VOC | 1,1,2,2-Tetrachloroethane | 27 U | 8 | 27 | | µg/m3 | | NC |
| GS | SVP-6b | BVSVP6SVD002 | FD | 13 Apr 2015 | 6 - 8 | TO15 | VOC | 1,1,2-Trichloro-1,2,2-trifluoroethane | 27 U | 9 | 27 | | µg/m3 | | NC |
| GS | SVP-6b | BVSVP6SVD002 | FD | 13 Apr 2015 | 6 - 8 | TO15 | VOC | 1,1,2-Trichloroethane | 27 U | 8.5 | 27 | | µg/m3 | | NC |
| GS | SVP-6b | BVSVP6SVD002 | FD | 13 Apr 2015 | 6 - 8 | TO15 | VOC | 1,1-Dichloroethane | 27 U | 8.5 | 27 | | µg/m3 | | NC |
| GS | SVP-6b | BVSVP6SVD002 | FD | 13 Apr 2015 | 6 - 8 | TO15 | VOC | 1,1-Dichloroethene | 27 U | 9 | 27 | | µg/m3 | | NC |
| GS | SVP-6b | BVSVP6SVD002 | FD | 13 Apr 2015 | 6 - 8 | TO15 | VOC | 1,2-Dichloroethane | 27 U | 8.5 | 27 | | µg/m3 | | NC |
| GS | SVP-6b | BVSVP6SVD002 | FD | 13 Apr 2015 | 6 - 8 | TO15 | VOC | Benzene | 27 U | 8.5 | 27 | | µg/m3 | | NC |
| GS | SVP-6b | BVSVP6SVD002 | FD | 13 Apr 2015 | 6 - 8 | TO15 | VOC | Carbon tetrachloride | 27 U | 8 | 27 | | µg/m3 | | NC |

APPENDIX E-2

**Analytical Data 2015 Biovent Sampling**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | SL | Units | Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| GS | SVP-6b | BVSVP6SVD002 | FD | 13 Apr 2015 | 6 - 8 | TO15 | VOC | Chloroethane | 27 U | 9 | 27 | | µg/m3 | | NC |
| GS | SVP-6b | BVSVP6SVD002 | FD | 13 Apr 2015 | 6 - 8 | TO15 | VOC | cis-1,2-Dichloroethene | 27 U | 8.5 | 27 | | µg/m3 | | NC |
| GS | SVP-6b | BVSVP6SVD002 | FD | 13 Apr 2015 | 6 - 8 | TO15 | VOC | Dichlorodifluoromethane | 27 U | 9 | 27 | | µg/m3 | | NC |
| GS | SVP-6b | BVSVP6SVD002 | FD | 13 Apr 2015 | 6 - 8 | TO15 | VOC | Ethylbenzene | 27 U | 8.5 | 27 | | µg/m3 | | NC |
| GS | SVP-6b | BVSVP6SVD002 | FD | 13 Apr 2015 | 6 - 8 | TO15 | VOC | m,p-Xylenes | 53 U | 16 | 53 | | µg/m3 | | NC |
| GS | SVP-6b | BVSVP6SVD002 | FD | 13 Apr 2015 | 6 - 8 | TO15 | VOC | Methylene chloride | 27 U | 9 | 27 | | µg/m3 | | NC |
| GS | SVP-6b | BVSVP6SVD002 | FD | 13 Apr 2015 | 6 - 8 | TO15 | VOC | n-Octane | 4900 J | | 530 | | µg/m3 | | NC |
| GS | SVP-6b | BVSVP6SVD002 | FD | 13 Apr 2015 | 6 - 8 | TO15 | VOC | o-Xylene | 27 U | 8 | 27 | | µg/m3 | | NC |
| GS | SVP-6b | BVSVP6SVD002 | FD | 13 Apr 2015 | 6 - 8 | TO15 | VOC | Propane | 530 U | | 530 | | µg/m3 | | NC |
| GS | SVP-6b | BVSVP6SVD002 | FD | 13 Apr 2015 | 6 - 8 | TO15 | VOC | Tetrachloroethene | 27 U | 7.4 | 27 | | µg/m3 | | NC |
| GS | SVP-6b | BVSVP6SVD002 | FD | 13 Apr 2015 | 6 - 8 | TO15 | VOC | Toluene | 27 U | 9 | 27 | | µg/m3 | | NC |
| GS | SVP-6b | BVSVP6SVD002 | FD | 13 Apr 2015 | 6 - 8 | TO15 | VOC | trans-1,2-Dichloroethene | 27 U | 10 | 27 | | µg/m3 | | NC |
| GS | SVP-6b | BVSVP6SVD002 | FD | 13 Apr 2015 | 6 - 8 | TO15 | VOC | Trichloroethene | 27 U | 7.4 | 27 | | µg/m3 | | NC |
| GS | SVP-6b | BVSVP6SVD002 | FD | 13 Apr 2015 | 6 - 8 | TO15 | VOC | Trichlorofluoromethane | 27 U | 9 | 27 | | µg/m3 | | NC |
| GS | SVP-6b | BVSVP6SVD002 | FD | 13 Apr 2015 | 6 - 8 | TO15 | VOC | Trichloromethane (Chloroform) | 27 U | 9 | 27 | | µg/m3 | | NC |
| GS | SVP-6b | BVSVP6SVD002 | FD | 13 Apr 2015 | 6 - 8 | TO15 | VOC | Vinyl chloride | 27 U | 9 | 27 | | µg/m3 | | NC |
| SO | BVBS1293 | BVBS1293S001 | N | 4 Feb 2015 | 3 - 4 | Walkley-Black | GENCHEM | Total Organic Carbon | 1850 = | 724 | 724 | | mg/kg | | NC |
| SO | BVBS1293 | BVBS1293S001 | N | 4 Feb 2015 | 3 - 4 | SW8015B | HC | Diesel Range Organics (C12-C14) | 6100 U | 3000 | 6100 | 5000 | µg/kg | X | N |
| SO | BVBS1293 | BVBS1293S001 | N | 4 Feb 2015 | 3 - 4 | SW8015B | HC | Diesel Range Organics (C15-C20) | 12000 = | 3000 | 6100 | 5000 | µg/kg | X | Y |
| SO | BVBS1293 | BVBS1293S001 | N | 4 Feb 2015 | 3 - 4 | SW8015B | HC | Diesel Range Organics (C21-C30) | 7700 = | 3000 | 6100 | 5000 | µg/kg | X | Y |
| SO | BVBS1293 | BVBS1293S001 | N | 4 Feb 2015 | 3 - 4 | SW8015B | HC | Diesel Range Organics (C8-C11) | 6100 U | 3000 | 6100 | 1000 | µg/kg | X | RL |
| SO | BVBS1293 | BVBS1293S001 | N | 4 Feb 2015 | 3 - 4 | SW8015B | HC | GRO (C4-C12) | 1100 U | 560 | 1100 | 1000 | µg/kg | X | N |
| SO | BVBS1293 | BVBS1293S001 | N | 4 Feb 2015 | 3 - 4 | SW8015B | HC | ORO (C31-C40) | 12000 U | 6100 | 12000 | 10000 | µg/kg | X | N |
| SO | BVBS1293 | BVBS1293S001 | N | 4 Feb 2015 | 3 - 4 | SW8015B | HC | TOTAL EFH(C8-C40) | 24000 = | 3000 | 6100 | 10000 | µg/kg | X | Y |
| SO | BVBS1293 | BVBS1293S001 | N | 4 Feb 2015 | 3 - 4 | SW8270C-SIM | PAH | 1-Methylnaphthalene | 12 U | 6.1 | 12 | 2.5 | µg/kg | X | RL |
| SO | BVBS1293 | BVBS1293S001 | N | 4 Feb 2015 | 3 - 4 | SW8270C-SIM | PAH | 2-Methylnaphthalene | 12 U | 6.1 | 12 | 2.5 | µg/kg | X | RL |
| SO | BVBS1293 | BVBS1293S001 | N | 4 Feb 2015 | 3 - 4 | SW8270C-SIM | PAH | Acenaphthene | 12 U | 6.1 | 12 | 2.5 | µg/kg | X | RL |
| SO | BVBS1293 | BVBS1293S001 | N | 4 Feb 2015 | 3 - 4 | SW8270C-SIM | PAH | Acenaphthylene | 12 U | 6.1 | 12 | 2.5 | µg/kg | X | RL |
| SO | BVBS1293 | BVBS1293S001 | N | 4 Feb 2015 | 3 - 4 | SW8270C-SIM | PAH | Anthracene | 9.5 J | 6.1 | 12 | 2.5 | µg/kg | X | Y |
| SO | BVBS1293 | BVBS1293S001 | N | 4 Feb 2015 | 3 - 4 | SW8270C-SIM | PAH | Benzo(a)anthracene | 12 U | 6.1 | 12 | | µg/kg | | NC |
| SO | BVBS1293 | BVBS1293S001 | N | 4 Feb 2015 | 3 - 4 | SW8270C-SIM | PAH | Benzo(a)pyrene | 27 = | 6.1 | 12 | | µg/kg | | NC |
| SO | BVBS1293 | BVBS1293S001 | N | 4 Feb 2015 | 3 - 4 | SW8270C-SIM | PAH | Benzo(b)fluoranthene | 39 = | 6.1 | 12 | | µg/kg | | NC |
| SO | BVBS1293 | BVBS1293S001 | N | 4 Feb 2015 | 3 - 4 | SW8270C-SIM | PAH | Benzo(ghi)perylene | 62 = | 6.1 | 12 | 2.5 | µg/kg | X | Y |
| SO | BVBS1293 | BVBS1293S001 | N | 4 Feb 2015 | 3 - 4 | SW8270C-SIM | PAH | Benzo(k)fluoranthene | 12 U | 6.1 | 12 | | µg/kg | | NC |
| SO | BVBS1293 | BVBS1293S001 | N | 4 Feb 2015 | 3 - 4 | SW8270C-SIM | PAH | Chrysene | 12 U | 6.1 | 12 | | µg/kg | | NC |
| SO | BVBS1293 | BVBS1293S001 | N | 4 Feb 2015 | 3 - 4 | SW8270C-SIM | PAH | Dibenzo(a,h)anthracene | 12 U | 6.1 | 12 | | µg/kg | | NC |

APPENDIX E-2

**Analytical Data 2015 Biovent Sampling**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | SL | Units | Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1293 | BVBS1293S001 | N | 4 Feb 2015 | 3 - 4 | SW8270C-SIM | PAH | Fluoranthene | 37 = | 6.1 | 12 | 5.2 | µg/kg | X | Y |
| SO | BVBS1293 | BVBS1293S001 | N | 4 Feb 2015 | 3 - 4 | SW8270C-SIM | PAH | Fluorene | 12 U | 6.1 | 12 | 3.8 | µg/kg | X | RL |
| SO | BVBS1293 | BVBS1293S001 | N | 4 Feb 2015 | 3 - 4 | SW8270C-SIM | PAH | Indeno(1,2,3-cd)pyrene | 38 = | 6.1 | 12 | | µg/kg | | NC |
| SO | BVBS1293 | BVBS1293S001 | N | 4 Feb 2015 | 3 - 4 | SW8270C-SIM | PAH | Naphthalene | 12 U | 6.1 | 12 | 3.6 | µg/kg | X | RL |
| SO | BVBS1293 | BVBS1293S001 | N | 4 Feb 2015 | 3 - 4 | SW8270C-SIM | PAH | PAHTEQM | 34.7 = | | | 4.47 | µg/kg | X | Y |
| SO | BVBS1293 | BVBS1293S001 | N | 4 Feb 2015 | 3 - 4 | SW8270C-SIM | PAH | Phenanthrene | 15 = | 6.1 | 12 | 3.9 | µg/kg | X | Y |
| SO | BVBS1293 | BVBS1293S001 | N | 4 Feb 2015 | 3 - 4 | SW8270C-SIM | PAH | Pyrene | 120 = | 6.1 | 12 | 5.6 | µg/kg | X | Y |
| SO | BVBS1293 | BVBS1293S001 | N | 4 Feb 2015 | 3 - 4 | SW8270C-SIM | PHTH | Bis(2-ethylhexyl)phthalate | 1200 = | 12 | 24 | 61 | µg/kg | X | Y |
| SO | BVBS1293 | BVBS1293S001 | N | 4 Feb 2015 | 3 - 4 | SW8270C-SIM | PHTH | Butyl benzyl phthalate | 24 U | 12 | 24 | 100 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S001 | N | 4 Feb 2015 | 3 - 4 | SW8270C-SIM | PHTH | Diethyl phthalate | 24 U | 12 | 24 | 27 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S001 | N | 4 Feb 2015 | 3 - 4 | SW8270C-SIM | PHTH | Dimethyl phthalate | 24 U | 12 | 24 | 27 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S001 | N | 4 Feb 2015 | 3 - 4 | SW8270C-SIM | PHTH | Di-n-butyl phthalate | 24 U | 12 | 24 | 27 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S001 | N | 4 Feb 2015 | 3 - 4 | SW8270C-SIM | PHTH | Di-n-octyl phthalate | 24 U | 12 | 24 | 27 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S001 | N | 4 Feb 2015 | 3 - 4 | SW8260B | SVOC | Diisopropyl ether | 1.1 U | 1.1 | 11 | 10 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S001 | N | 4 Feb 2015 | 3 - 4 | SW8270C-SIM | SVOC | n-Nitrosodimethylamine | 24 U | 12 | 24 | 10 | µg/kg | X | RL |
| SO | BVBS1293 | BVBS1293S001 | N | 4 Feb 2015 | 3 - 4 | SW8260B | SVOC | tert-Amyl methyl ether | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S001 | N | 4 Feb 2015 | 3 - 4 | SW8260B | SVOC | tert-Butyl ethyl ether | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S001 | N | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | 1,1,1,2-Tetrachloroethane | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S001 | N | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | 1,1,1-Trichloroethane | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S001 | N | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | 1,1,2,2-Tetrachloroethane | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S001 | N | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | 1,1,2-Trichloro-1,2,2-trifluoroethane | 2.2 U | 2.2 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S001 | N | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | 1,1,2-Trichloroethane | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S001 | N | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | 1,1-Dichloroethane | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S001 | N | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | 1,1-Dichloroethene | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S001 | N | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | 1,1-Dichloropropene | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S001 | N | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | 1,2,3-Trichlorobenzene | 2.2 U | 2.2 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S001 | N | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | 1,2,3-Trichloropropane | 2.2 U | 2.2 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S001 | N | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | 1,2,4-Trichlorobenzene | 2.2 U | 2.2 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S001 | N | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | 1,2,4-Trimethylbenzene | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S001 | N | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | 1,2-Dibromo-3-chloropropane | 2.2 U | 2.2 | 11 | 10 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S001 | N | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | 1,2-Dibromoethane (EDB) | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S001 | N | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | 1,2-Dichlorobenzene | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S001 | N | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | 1,2-Dichloroethane | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S001 | N | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | 1,2-Dichloropropane | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S001 | N | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | 1,3,5-Trimethylbenzene | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S001 | N | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | 1,3-Dichlorobenzene | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |

APPENDIX E-2

**Analytical Data 2015 Biovent Sampling**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | SL | Units | Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1293 | BVBS1293S001 | N | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | 1,3-Dichloropropane | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S001 | N | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | 1,4-Dichlorobenzene | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S001 | N | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | 2,2-Dichloropropane | 2.2 U | 2.2 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S001 | N | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | 2-Butanone (MEK) | 5.4 U | 5.4 | 22 | 20 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S001 | N | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | 2-Chloro-1,1,1-trifluoroethane | 2.2 U | 2.2 | 11 | 10 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S001 | N | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | 2-Chloroethyl vinyl ether | 2.2 U | 2.2 | 11 | 10 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S001 | N | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | 2-Chlorotoluene | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S001 | N | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | 2-Hexanone | 5.4 U | 5.4 | 11 | 10 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S001 | N | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | 4-Chlorotoluene | 1.1 U | 1.1 | 11 | 10 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S001 | N | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | 4-Methyl-2-pentanone (MIBK) | 5.4 U | 5.4 | 11 | 10 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S001 | N | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | Acetone | 5.4 U | 5.4 | 22 | 20 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S001 | N | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | Benzene | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S001 | N | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | Bromobenzene | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S001 | N | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | Bromochloromethane | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S001 | N | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | Bromodichloromethane | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S001 | N | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | Bromoform | 2.2 U | 2.2 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S001 | N | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | Bromomethane | 2.2 U | 2.2 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S001 | N | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | Carbon tetrachloride | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S001 | N | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | Chlorobenzene | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S001 | N | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | Chloroethane | 2.2 U | 2.2 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S001 | N | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | Chloromethane | 2.2 U | 2.2 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S001 | N | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | Chlorotrifluoroethylene | 2.2 U | 2.2 | 11 | 10 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S001 | N | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | cis-1,2-Dichloroethene | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S001 | N | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | cis-1,3-Dichloropropene | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S001 | N | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | Dibromochloromethane | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S001 | N | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | Dibromomethane | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S001 | N | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | Dichlorodifluoromethane | 2.2 U | 2.2 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S001 | N | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | Ethylbenzene | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S001 | N | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | Hexachlorobutadiene | 2.2 U | 2.2 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S001 | N | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | Isopropylbenzene | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S001 | N | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | m,p-Xylenes | 2.2 U | 2.2 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S001 | N | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | Methylene chloride | 2.2 U | 2.2 | 11 | 10 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S001 | N | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | Methyl-tert-butyl Ether (MTBE) | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S001 | N | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | n-butylbenzene | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S001 | N | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | n-Propylbenzene | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S001 | N | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | o-Xylene | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |

APPENDIX E-2

**Analytical Data 2015 Biovent Sampling**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | SL | Units | Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1293 | BVBS1293S001 | N | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | p-Isopropyltoluene | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S001 | N | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | sec-Butylbenzene | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S001 | N | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | Styrene | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S001 | N | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | tert-Butanol (TBA) | 11 U | 11 | 54 | | µg/kg | | NC |
| SO | BVBS1293 | BVBS1293S001 | N | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | tert-Butylbenzene | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S001 | N | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | Tetrachloroethene | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S001 | N | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | Toluene | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S001 | N | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | trans-1,2-Dichloroethene | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S001 | N | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | trans-1,3-Dichloropropene | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S001 | N | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | Trichloroethene | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S001 | N | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | Trichlorofluoromethane | 2.2 U | 2.2 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S001 | N | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | Trichloromethane (Chloroform) | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S001 | N | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | Vinyl chloride | 2.2 U | 2.2 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S001SP | FS | 4 Feb 2015 | 3 - 4 | SW9045D | GENCHEM | pH | 7.35 = | | | | pH units | | NC |
| SO | BVBS1293 | BVBS1293S001SP | FS | 4 Feb 2015 | 3 - 4 | SW9060 | GENCHEM | Total Organic Carbon | 4150 = | 33.3 | 100 | | mg/kg | | NC |
| SO | BVBS1293 | BVBS1293S001SP | FS | 4 Feb 2015 | 3 - 4 | SW8015B | HC | Diesel Range Organics (C12-C14) | 3100 J | 1600 | 5100 | 5000 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S001SP | FS | 4 Feb 2015 | 3 - 4 | SW8015B | HC | Diesel Range Organics (C15-C20) | 4900 J | 1600 | 5100 | 5000 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S001SP | FS | 4 Feb 2015 | 3 - 4 | SW8015B | HC | Diesel Range Organics (C21-C30) | 5100 U | 1600 | 5100 | 5000 | µg/kg | X | N |
| SO | BVBS1293 | BVBS1293S001SP | FS | 4 Feb 2015 | 3 - 4 | SW8015B | HC | Diesel Range Organics (C8-C11) | 5100 U | 1600 | 5100 | 1000 | µg/kg | X | RL |
| SO | BVBS1293 | BVBS1293S001SP | FS | 4 Feb 2015 | 3 - 4 | SW8015B | HC | GRO (C4-C12) | 510 U | 130 | 510 | 1000 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S001SP | FS | 4 Feb 2015 | 3 - 4 | SW8015B | HC | ORO (C31-C40) | 5100 U | 1600 | 5100 | 10000 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S001SP | FS | 4 Feb 2015 | 3 - 4 | SW8270C-SIM | PAH | 1-Methylnaphthalene | 10 U | 3.7 | 10 | 2.5 | µg/kg | X | RL |
| SO | BVBS1293 | BVBS1293S001SP | FS | 4 Feb 2015 | 3 - 4 | SW8270C-SIM | PAH | 2-Methylnaphthalene | 10 U | 3.6 | 10 | 2.5 | µg/kg | X | RL |
| SO | BVBS1293 | BVBS1293S001SP | FS | 4 Feb 2015 | 3 - 4 | SW8270C-SIM | PAH | Acenaphthene | 10 U | 4.7 | 10 | 2.5 | µg/kg | X | RL |
| SO | BVBS1293 | BVBS1293S001SP | FS | 4 Feb 2015 | 3 - 4 | SW8270C-SIM | PAH | Acenaphthylene | 10 U | 4.6 | 10 | 2.5 | µg/kg | X | RL |
| SO | BVBS1293 | BVBS1293S001SP | FS | 4 Feb 2015 | 3 - 4 | SW8270C-SIM | PAH | Anthracene | 10 U | 5.4 | 10 | 2.5 | µg/kg | X | RL |
| SO | BVBS1293 | BVBS1293S001SP | FS | 4 Feb 2015 | 3 - 4 | SW8270C-SIM | PAH | Benzo(a)anthracene | 10 U | 4.7 | 10 | | µg/kg | | NC |
| SO | BVBS1293 | BVBS1293S001SP | FS | 4 Feb 2015 | 3 - 4 | SW8270C-SIM | PAH | Benzo(a)pyrene | 10 U | 5.1 | 10 | | µg/kg | | NC |
| SO | BVBS1293 | BVBS1293S001SP | FS | 4 Feb 2015 | 3 - 4 | SW8270C-SIM | PAH | Benzo(b)fluoranthene | 10 U | 5.2 | 10 | | µg/kg | | NC |
| SO | BVBS1293 | BVBS1293S001SP | FS | 4 Feb 2015 | 3 - 4 | SW8270C-SIM | PAH | Benzo(ghi)perylene | 10 U | 4.2 | 10 | 2.5 | µg/kg | X | RL |
| SO | BVBS1293 | BVBS1293S001SP | FS | 4 Feb 2015 | 3 - 4 | SW8270C-SIM | PAH | Benzo(k)fluoranthene | 10 U | 6.6 | 10 | | µg/kg | | NC |
| SO | BVBS1293 | BVBS1293S001SP | FS | 4 Feb 2015 | 3 - 4 | SW8270C-SIM | PAH | Chrysene | 10 U | 5.1 | 10 | | µg/kg | | NC |
| SO | BVBS1293 | BVBS1293S001SP | FS | 4 Feb 2015 | 3 - 4 | SW8270C-SIM | PAH | Dibenzo(a,h)anthracene | 10 U | 3.8 | 10 | | µg/kg | | NC |
| SO | BVBS1293 | BVBS1293S001SP | FS | 4 Feb 2015 | 3 - 4 | SW8270C-SIM | PAH | Fluoranthene | 10 U | 5.8 | 10 | 5.2 | µg/kg | X | RL |
| SO | BVBS1293 | BVBS1293S001SP | FS | 4 Feb 2015 | 3 - 4 | SW8270C-SIM | PAH | Fluorene | 10 U | 5.1 | 10 | 3.8 | µg/kg | X | RL |
| SO | BVBS1293 | BVBS1293S001SP | FS | 4 Feb 2015 | 3 - 4 | SW8270C-SIM | PAH | Indeno(1,2,3-cd)pyrene | 10 U | 4.6 | 10 | | µg/kg | | NC |

APPENDIX E-2

**Analytical Data 2015 Biovent Sampling**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | SL | Units | Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1293 | BVBS1293S001SP | FS | 4 Feb 2015 | 3 - 4 | SW8270C-SIM | PAH | Naphthalene | 10 U | 3.8 | 10 | 3.6 | µg/kg | X | RL |
| SO | BVBS1293 | BVBS1293S001SP | FS | 4 Feb 2015 | 3 - 4 | SW8270C-SIM | PAH | PAHTEQM | 0 U | | | 4.47 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S001SP | FS | 4 Feb 2015 | 3 - 4 | SW8270C-SIM | PAH | Phenanthrene | 10 U | 5.8 | 10 | 3.9 | µg/kg | X | RL |
| SO | BVBS1293 | BVBS1293S001SP | FS | 4 Feb 2015 | 3 - 4 | SW8270C-SIM | PAH | Pyrene | 10 U | 5.4 | 10 | 5.6 | µg/kg | X | N |
| SO | BVBS1293 | BVBS1293S001SP | FS | 4 Feb 2015 | 3 - 4 | SW8270C-SIM | PHTH | Bis(2-ethylhexyl)phthalate | 56 = | 4.1 | 10 | 61 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S001SP | FS | 4 Feb 2015 | 3 - 4 | SW8270C-SIM | PHTH | Butyl benzyl phthalate | 6 J | 4.4 | 10 | 100 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S001SP | FS | 4 Feb 2015 | 3 - 4 | SW8270C-SIM | PHTH | Diethyl phthalate | 10 U | 5 | 10 | 27 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S001SP | FS | 4 Feb 2015 | 3 - 4 | SW8270C-SIM | PHTH | Dimethyl phthalate | 350 = | 5.4 | 10 | 27 | µg/kg | X | Y |
| SO | BVBS1293 | BVBS1293S001SP | FS | 4 Feb 2015 | 3 - 4 | SW8270C-SIM | PHTH | Di-n-butyl phthalate | 10 = | 5.2 | 10 | 27 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S001SP | FS | 4 Feb 2015 | 3 - 4 | SW8270C-SIM | PHTH | Di-n-octyl phthalate | 10 U | 4.8 | 10 | 27 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S001SP | FS | 4 Feb 2015 | 3 - 4 | SW8270C-SIM | SVOC | n-Nitrosodimethylamine | 10 U | 3.5 | 10 | 10 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S001SP | FS | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | 1,1,1,2-Tetrachloroethane | 0.22 U | 0.22 | 4.5 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S001SP | FS | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | 1,1,1-Trichloroethane | 0.2 U | 0.2 | 4.5 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S001SP | FS | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | 1,1,2,2-Tetrachloroethane | 0.31 U | 0.31 | 18 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S001SP | FS | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | 1,1,2-Trichloro-1,2,2-trifluoroethane | 0.32 U | 0.32 | 4.5 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S001SP | FS | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | 1,1,2-Trichloroethane | 0.32 U | 0.32 | 4.5 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S001SP | FS | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | 1,1-Dichloroethane | 0.19 U | 0.19 | 4.5 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S001SP | FS | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | 1,1-Dichloroethene | 0.31 U | 0.31 | 4.5 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S001SP | FS | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | 1,1-Dichloropropene | 0.3 U | 0.3 | 4.5 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S001SP | FS | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | 1,2,3-Trichlorobenzene | 0.82 U | 0.82 | 18 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S001SP | FS | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | 1,2,3-Trichloropropane | 0.75 U | 0.75 | 4.5 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S001SP | FS | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | 1,2,4-Trichlorobenzene | 0.28 U | 0.28 | 18 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S001SP | FS | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | 1,2,4-Trimethylbenzene | 0.53 U | 0.53 | 9 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S001SP | FS | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | 1,2-Dibromo-3-chloropropane | 1.6 U | 1.6 | 9 | 10 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S001SP | FS | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | 1,2-Dibromoethane (EDB) | 0.23 U | 0.23 | 9 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S001SP | FS | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | 1,2-Dichlorobenzene | 0.21 U | 0.21 | 4.5 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S001SP | FS | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | 1,2-Dichloroethane | 0.28 U | 0.28 | 4.5 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S001SP | FS | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | 1,2-Dichloropropane | 0.39 U | 0.39 | 4.5 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S001SP | FS | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | 1,3,5-Trimethylbenzene | 0.49 U | 0.49 | 9 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S001SP | FS | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | 1,3-Dichlorobenzene | 0.16 U | 0.16 | 4.5 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S001SP | FS | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | 1,3-Dichloropropane | 0.23 U | 0.23 | 4.5 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S001SP | FS | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | 1,4-Dichlorobenzene | 0.2 U | 0.2 | 4.5 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S001SP | FS | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | 2-Butanone (MEK) | 3.4 U | 3.4 | 9 | 20 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S001SP | FS | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | 2-Chloro-1,1,1-trifluoroethane | 0.56 U | 0.56 | 4.5 | 10 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S001SP | FS | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | 2-Chlorotoluene | 0.21 U | 0.21 | 9 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S001SP | FS | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | 2-Hexanone | 1.6 U | 1.6 | 9 | 10 | µg/kg | | N |

APPENDIX E-2

**Analytical Data 2015 Biovent Sampling**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | SL | Units | Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1293 | BVBS1293S001SP | FS | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | 4-Chlorotoluene | 0.19 U | 0.19 | 9 | 10 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S001SP | FS | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | 4-Methyl-2-pentanone (MIBK) | 3.9 U | 3.9 | 9 | 10 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S001SP | FS | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | Acetone | 12 J | 5.6 | 18 | 20 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S001SP | FS | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | Benzene | 0.12 U | 0.12 | 0.45 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S001SP | FS | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | Bromobenzene | 0.19 U | 0.19 | 18 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S001SP | FS | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | Bromochloromethane | 0.62 U | 0.62 | 4.5 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S001SP | FS | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | Bromodichloromethane | 0.21 U | 0.21 | 4.5 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S001SP | FS | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | Bromoform | 0.72 U | 0.72 | 9 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S001SP | FS | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | Bromomethane | 8.5 U | 8.5 | 18 | 5 | µg/kg | X | RL |
| SO | BVBS1293 | BVBS1293S001SP | FS | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | Carbon tetrachloride | 0.25 U | 0.25 | 4.5 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S001SP | FS | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | Chlorobenzene | 0.2 U | 0.2 | 4.5 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S001SP | FS | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | Chloroethane | 1.3 U | 1.3 | 9 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S001SP | FS | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | Chloromethane | 0.27 U | 0.27 | 9 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S001SP | FS | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | Chlorotrifluoroethylene | 1.1 U | 1.1 | 4.5 | 10 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S001SP | FS | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | cis-1,2-Dichloroethene | 0.25 U | 0.25 | 4.5 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S001SP | FS | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | cis-1,3-Dichloropropene | 0.23 U | 0.23 | 4.5 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S001SP | FS | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | Dibromochloromethane | 0.51 U | 0.51 | 9 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S001SP | FS | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | Dibromomethane | 0.7 U | 0.7 | 4.5 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S001SP | FS | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | Dichlorodifluoromethane | 0.4 U | 0.4 | 9 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S001SP | FS | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | Ethylbenzene | 0.14 U | 0.14 | 9 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S001SP | FS | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | Hexachlorobutadiene | 0.29 UJ | 0.29 | 18 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S001SP | FS | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | Isopropylbenzene | 0.49 U | 0.49 | 9 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S001SP | FS | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | m,p-Xylenes | 0.24 U | 0.24 | 18 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S001SP | FS | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | Methylene chloride | 1.2 U | 1.2 | 4.5 | 10 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S001SP | FS | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | Methyl-tert-butyl Ether (MTBE) | 0.27 U | 0.27 | 4.5 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S001SP | FS | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | n-butylbenzene | 0.14 U | 0.14 | 18 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S001SP | FS | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | n-Propylbenzene | 0.45 U | 0.45 | 9 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S001SP | FS | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | o-Xylene | 0.5 U | 0.5 | 9 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S001SP | FS | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | p-Isopropyltoluene | 0.57 U | 0.57 | 18 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S001SP | FS | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | sec-Butylbenzene | 0.52 U | 0.52 | 18 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S001SP | FS | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | Styrene | 0.54 U | 0.54 | 18 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S001SP | FS | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | tert-Butylbenzene | 0.14 U | 0.14 | 18 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S001SP | FS | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | Tetrachloroethene | 0.19 U | 0.19 | 4.5 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S001SP | FS | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | Toluene | 0.46 U | 0.46 | 4.5 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S001SP | FS | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | trans-1,2-Dichloroethene | 0.46 U | 0.46 | 4.5 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S001SP | FS | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | trans-1,3-Dichloropropene | 0.55 U | 0.55 | 9 | 5 | µg/kg | | N |

APPENDIX E-2

**Analytical Data 2015 Biovent Sampling**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | SL | Units | Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1293 | BVBS1293S001SP | FS | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | Trichloroethene | 0.27 U | 0.27 | 4.5 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S001SP | FS | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | Trichlorofluoromethane | 0.34 U | 0.34 | 4.5 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S001SP | FS | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | Trichloromethane (Chloroform) | 0.22 U | 0.22 | 4.5 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S001SP | FS | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | Vinyl chloride | 0.45 U | 0.45 | 9 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S002 | N | 4 Feb 2015 | 7 - 8 | Walkley-Black | GENCHEM | Total Organic Carbon | 1810 = | 666 | 666 | | mg/kg | | NC |
| SO | BVBS1293 | BVBS1293S002 | N | 4 Feb 2015 | 7 - 8 | SW8015B | HC | Diesel Range Organics (C12-C14) | 5800 U | 2900 | 5800 | 5000 | µg/kg | X | N |
| SO | BVBS1293 | BVBS1293S002 | N | 4 Feb 2015 | 7 - 8 | SW8015B | HC | Diesel Range Organics (C15-C20) | 5800 U | 2900 | 5800 | 5000 | µg/kg | X | N |
| SO | BVBS1293 | BVBS1293S002 | N | 4 Feb 2015 | 7 - 8 | SW8015B | HC | Diesel Range Organics (C21-C30) | 5800 U | 2900 | 5800 | 5000 | µg/kg | X | N |
| SO | BVBS1293 | BVBS1293S002 | N | 4 Feb 2015 | 7 - 8 | SW8015B | HC | Diesel Range Organics (C8-C11) | 5800 U | 2900 | 5800 | 1000 | µg/kg | X | RL |
| SO | BVBS1293 | BVBS1293S002 | N | 4 Feb 2015 | 7 - 8 | SW8015B | HC | GRO (C4-C12) | 920 U | 460 | 920 | 1000 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S002 | N | 4 Feb 2015 | 7 - 8 | SW8015B | HC | ORO (C31-C40) | 12000 U | 5800 | 12000 | 10000 | µg/kg | X | N |
| SO | BVBS1293 | BVBS1293S002 | N | 4 Feb 2015 | 7 - 8 | SW8015B | HC | TOTAL EFH(C8-C40) | 3700 J | 2900 | 5800 | 10000 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S002 | N | 4 Feb 2015 | 7 - 8 | SW8270C-SIM | PAH | 1-Methylnaphthalene | 12 U | 5.8 | 12 | 2.5 | µg/kg | X | RL |
| SO | BVBS1293 | BVBS1293S002 | N | 4 Feb 2015 | 7 - 8 | SW8270C-SIM | PAH | 2-Methylnaphthalene | 12 U | 5.8 | 12 | 2.5 | µg/kg | X | RL |
| SO | BVBS1293 | BVBS1293S002 | N | 4 Feb 2015 | 7 - 8 | SW8270C-SIM | PAH | Acenaphthene | 12 U | 5.8 | 12 | 2.5 | µg/kg | X | RL |
| SO | BVBS1293 | BVBS1293S002 | N | 4 Feb 2015 | 7 - 8 | SW8270C-SIM | PAH | Acenaphthylene | 12 U | 5.8 | 12 | 2.5 | µg/kg | X | RL |
| SO | BVBS1293 | BVBS1293S002 | N | 4 Feb 2015 | 7 - 8 | SW8270C-SIM | PAH | Anthracene | 12 U | 5.8 | 12 | 2.5 | µg/kg | X | RL |
| SO | BVBS1293 | BVBS1293S002 | N | 4 Feb 2015 | 7 - 8 | SW8270C-SIM | PAH | Benzo(a)anthracene | 12 U | 5.8 | 12 | | µg/kg | | NC |
| SO | BVBS1293 | BVBS1293S002 | N | 4 Feb 2015 | 7 - 8 | SW8270C-SIM | PAH | Benzo(a)pyrene | 12 U | 5.8 | 12 | | µg/kg | | NC |
| SO | BVBS1293 | BVBS1293S002 | N | 4 Feb 2015 | 7 - 8 | SW8270C-SIM | PAH | Benzo(b)fluoranthene | 12 U | 5.8 | 12 | | µg/kg | | NC |
| SO | BVBS1293 | BVBS1293S002 | N | 4 Feb 2015 | 7 - 8 | SW8270C-SIM | PAH | Benzo(ghi)perylene | 12 U | 5.8 | 12 | 2.5 | µg/kg | X | RL |
| SO | BVBS1293 | BVBS1293S002 | N | 4 Feb 2015 | 7 - 8 | SW8270C-SIM | PAH | Benzo(k)fluoranthene | 12 U | 5.8 | 12 | | µg/kg | | NC |
| SO | BVBS1293 | BVBS1293S002 | N | 4 Feb 2015 | 7 - 8 | SW8270C-SIM | PAH | Chrysene | 12 U | 5.8 | 12 | | µg/kg | | NC |
| SO | BVBS1293 | BVBS1293S002 | N | 4 Feb 2015 | 7 - 8 | SW8270C-SIM | PAH | Dibenzo(a,h)anthracene | 12 U | 5.8 | 12 | | µg/kg | | NC |
| SO | BVBS1293 | BVBS1293S002 | N | 4 Feb 2015 | 7 - 8 | SW8270C-SIM | PAH | Fluoranthene | 12 U | 5.8 | 12 | 5.2 | µg/kg | X | RL |
| SO | BVBS1293 | BVBS1293S002 | N | 4 Feb 2015 | 7 - 8 | SW8270C-SIM | PAH | Fluorene | 12 U | 5.8 | 12 | 3.8 | µg/kg | X | RL |
| SO | BVBS1293 | BVBS1293S002 | N | 4 Feb 2015 | 7 - 8 | SW8270C-SIM | PAH | Indeno(1,2,3-cd)pyrene | 12 U | 5.8 | 12 | | µg/kg | | NC |
| SO | BVBS1293 | BVBS1293S002 | N | 4 Feb 2015 | 7 - 8 | SW8270C-SIM | PAH | Naphthalene | 12 U | 5.8 | 12 | 3.6 | µg/kg | X | RL |
| SO | BVBS1293 | BVBS1293S002 | N | 4 Feb 2015 | 7 - 8 | SW8270C-SIM | PAH | PAHTEQM | 0 U | | | 4.47 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S002 | N | 4 Feb 2015 | 7 - 8 | SW8270C-SIM | PAH | Phenanthrene | 12 U | 5.8 | 12 | 3.9 | µg/kg | X | RL |
| SO | BVBS1293 | BVBS1293S002 | N | 4 Feb 2015 | 7 - 8 | SW8270C-SIM | PAH | Pyrene | 12 U | 5.8 | 12 | 5.6 | µg/kg | X | RL |
| SO | BVBS1293 | BVBS1293S002 | N | 4 Feb 2015 | 7 - 8 | SW8270C-SIM | PHTH | Bis(2-ethylhexyl)phthalate | 23 U | 12 | 23 | 61 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S002 | N | 4 Feb 2015 | 7 - 8 | SW8270C-SIM | PHTH | Butyl benzyl phthalate | 23 U | 12 | 23 | 100 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S002 | N | 4 Feb 2015 | 7 - 8 | SW8270C-SIM | PHTH | Diethyl phthalate | 23 U | 12 | 23 | 27 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S002 | N | 4 Feb 2015 | 7 - 8 | SW8270C-SIM | PHTH | Dimethyl phthalate | 23 U | 12 | 23 | 27 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S002 | N | 4 Feb 2015 | 7 - 8 | SW8270C-SIM | PHTH | Di-n-butyl phthalate | 23 U | 12 | 23 | 27 | µg/kg | | N |

APPENDIX E-2

**Analytical Data 2015 Biovent Sampling**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | SL | Units | Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1293 | BVBS1293S002 | N | 4 Feb 2015 | 7 - 8 | SW8270C-SIM | PHTH | Di-n-octyl phthalate | 23 U | 12 | 23 | 27 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S002 | N | 4 Feb 2015 | 7 - 8 | SW8260B | SVOC | Diisopropyl ether | 0.97 U | 0.97 | 9.7 | 10 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S002 | N | 4 Feb 2015 | 7 - 8 | SW8270C-SIM | SVOC | n-Nitrosodimethylamine | 23 U | 12 | 23 | 10 | µg/kg | X | RL |
| SO | BVBS1293 | BVBS1293S002 | N | 4 Feb 2015 | 7 - 8 | SW8260B | SVOC | tert-Amyl methyl ether | 0.97 U | 0.97 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S002 | N | 4 Feb 2015 | 7 - 8 | SW8260B | SVOC | tert-Butyl ethyl ether | 0.97 U | 0.97 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S002 | N | 4 Feb 2015 | 7 - 8 | SW8260B | VOC | 1,1,1,2-Tetrachloroethane | 0.97 U | 0.97 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S002 | N | 4 Feb 2015 | 7 - 8 | SW8260B | VOC | 1,1,1-Trichloroethane | 0.97 U | 0.97 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S002 | N | 4 Feb 2015 | 7 - 8 | SW8260B | VOC | 1,1,2,2-Tetrachloroethane | 0.97 U | 0.97 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S002 | N | 4 Feb 2015 | 7 - 8 | SW8260B | VOC | 1,1,2-Trichloro-1,2,2-trifluoroethane | 1.9 U | 1.9 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S002 | N | 4 Feb 2015 | 7 - 8 | SW8260B | VOC | 1,1,2-Trichloroethane | 0.97 U | 0.97 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S002 | N | 4 Feb 2015 | 7 - 8 | SW8260B | VOC | 1,1-Dichloroethane | 0.97 U | 0.97 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S002 | N | 4 Feb 2015 | 7 - 8 | SW8260B | VOC | 1,1-Dichloroethene | 0.97 U | 0.97 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S002 | N | 4 Feb 2015 | 7 - 8 | SW8260B | VOC | 1,1-Dichloropropene | 0.97 U | 0.97 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S002 | N | 4 Feb 2015 | 7 - 8 | SW8260B | VOC | 1,2,3-Trichlorobenzene | 1.9 U | 1.9 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S002 | N | 4 Feb 2015 | 7 - 8 | SW8260B | VOC | 1,2,3-Trichloropropane | 1.9 U | 1.9 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S002 | N | 4 Feb 2015 | 7 - 8 | SW8260B | VOC | 1,2,4-Trichlorobenzene | 1.9 U | 1.9 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S002 | N | 4 Feb 2015 | 7 - 8 | SW8260B | VOC | 1,2,4-Trimethylbenzene | 0.97 U | 0.97 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S002 | N | 4 Feb 2015 | 7 - 8 | SW8260B | VOC | 1,2-Dibromo-3-chloropropane | 1.9 U | 1.9 | 9.7 | 10 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S002 | N | 4 Feb 2015 | 7 - 8 | SW8260B | VOC | 1,2-Dibromoethane (EDB) | 0.97 U | 0.97 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S002 | N | 4 Feb 2015 | 7 - 8 | SW8260B | VOC | 1,2-Dichlorobenzene | 0.97 U | 0.97 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S002 | N | 4 Feb 2015 | 7 - 8 | SW8260B | VOC | 1,2-Dichloroethane | 0.97 U | 0.97 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S002 | N | 4 Feb 2015 | 7 - 8 | SW8260B | VOC | 1,2-Dichloropropane | 0.97 U | 0.97 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S002 | N | 4 Feb 2015 | 7 - 8 | SW8260B | VOC | 1,3,5-Trimethylbenzene | 0.97 U | 0.97 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S002 | N | 4 Feb 2015 | 7 - 8 | SW8260B | VOC | 1,3-Dichlorobenzene | 0.97 U | 0.97 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S002 | N | 4 Feb 2015 | 7 - 8 | SW8260B | VOC | 1,3-Dichloropropane | 0.97 U | 0.97 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S002 | N | 4 Feb 2015 | 7 - 8 | SW8260B | VOC | 1,4-Dichlorobenzene | 0.97 U | 0.97 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S002 | N | 4 Feb 2015 | 7 - 8 | SW8260B | VOC | 2,2-Dichloropropane | 1.9 U | 1.9 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S002 | N | 4 Feb 2015 | 7 - 8 | SW8260B | VOC | 2-Butanone (MEK) | 4.8 U | 4.8 | 19 | 20 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S002 | N | 4 Feb 2015 | 7 - 8 | SW8260B | VOC | 2-Chloro-1,1,1-trifluoroethane | 1.9 U | 1.9 | 9.7 | 10 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S002 | N | 4 Feb 2015 | 7 - 8 | SW8260B | VOC | 2-Chloroethyl vinyl ether | 1.9 U | 1.9 | 9.7 | 10 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S002 | N | 4 Feb 2015 | 7 - 8 | SW8260B | VOC | 2-Chlorotoluene | 0.97 U | 0.97 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S002 | N | 4 Feb 2015 | 7 - 8 | SW8260B | VOC | 2-Hexanone | 4.8 U | 4.8 | 9.7 | 10 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S002 | N | 4 Feb 2015 | 7 - 8 | SW8260B | VOC | 4-Chlorotoluene | 0.97 U | 0.97 | 9.7 | 10 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S002 | N | 4 Feb 2015 | 7 - 8 | SW8260B | VOC | 4-Methyl-2-pentanone (MIBK) | 4.8 U | 4.8 | 9.7 | 10 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S002 | N | 4 Feb 2015 | 7 - 8 | SW8260B | VOC | Acetone | 12 J | 4.8 | 19 | 20 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S002 | N | 4 Feb 2015 | 7 - 8 | SW8260B | VOC | Benzene | 0.97 U | 0.97 | 4.8 | 5 | µg/kg | | N |

APPENDIX E-2

**Analytical Data 2015 Biovent Sampling**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | SL | Units | Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1293 | BVBS1293S002 | N | 4 Feb 2015 | 7 - 8 | SW8260B | VOC | Bromobenzene | 0.97 U | 0.97 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S002 | N | 4 Feb 2015 | 7 - 8 | SW8260B | VOC | Bromochloromethane | 0.97 U | 0.97 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S002 | N | 4 Feb 2015 | 7 - 8 | SW8260B | VOC | Bromodichloromethane | 0.97 U | 0.97 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S002 | N | 4 Feb 2015 | 7 - 8 | SW8260B | VOC | Bromoform | 1.9 U | 1.9 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S002 | N | 4 Feb 2015 | 7 - 8 | SW8260B | VOC | Bromomethane | 1.9 U | 1.9 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S002 | N | 4 Feb 2015 | 7 - 8 | SW8260B | VOC | Carbon tetrachloride | 0.97 U | 0.97 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S002 | N | 4 Feb 2015 | 7 - 8 | SW8260B | VOC | Chlorobenzene | 0.97 U | 0.97 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S002 | N | 4 Feb 2015 | 7 - 8 | SW8260B | VOC | Chloroethane | 1.9 U | 1.9 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S002 | N | 4 Feb 2015 | 7 - 8 | SW8260B | VOC | Chloromethane | 1.9 U | 1.9 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S002 | N | 4 Feb 2015 | 7 - 8 | SW8260B | VOC | Chlorotrifluoroethylene | 1.9 U | 1.9 | 9.7 | 10 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S002 | N | 4 Feb 2015 | 7 - 8 | SW8260B | VOC | cis-1,2-Dichloroethene | 0.97 U | 0.97 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S002 | N | 4 Feb 2015 | 7 - 8 | SW8260B | VOC | cis-1,3-Dichloropropene | 0.97 U | 0.97 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S002 | N | 4 Feb 2015 | 7 - 8 | SW8260B | VOC | Dibromochloromethane | 0.97 U | 0.97 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S002 | N | 4 Feb 2015 | 7 - 8 | SW8260B | VOC | Dibromomethane | 0.97 U | 0.97 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S002 | N | 4 Feb 2015 | 7 - 8 | SW8260B | VOC | Dichlorodifluoromethane | 1.9 U | 1.9 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S002 | N | 4 Feb 2015 | 7 - 8 | SW8260B | VOC | Ethylbenzene | 0.97 U | 0.97 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S002 | N | 4 Feb 2015 | 7 - 8 | SW8260B | VOC | Hexachlorobutadiene | 1.9 U | 1.9 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S002 | N | 4 Feb 2015 | 7 - 8 | SW8260B | VOC | Isopropylbenzene | 0.97 U | 0.97 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S002 | N | 4 Feb 2015 | 7 - 8 | SW8260B | VOC | m,p-Xylenes | 1.9 U | 1.9 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S002 | N | 4 Feb 2015 | 7 - 8 | SW8260B | VOC | Methylene chloride | 1.9 U | 1.9 | 9.7 | 10 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S002 | N | 4 Feb 2015 | 7 - 8 | SW8260B | VOC | Methyl-tert-butyl Ether (MTBE) | 0.97 U | 0.97 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S002 | N | 4 Feb 2015 | 7 - 8 | SW8260B | VOC | n-butylbenzene | 0.97 U | 0.97 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S002 | N | 4 Feb 2015 | 7 - 8 | SW8260B | VOC | n-Propylbenzene | 0.97 U | 0.97 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S002 | N | 4 Feb 2015 | 7 - 8 | SW8260B | VOC | o-Xylene | 0.97 U | 0.97 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S002 | N | 4 Feb 2015 | 7 - 8 | SW8260B | VOC | p-Isopropyltoluene | 0.97 U | 0.97 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S002 | N | 4 Feb 2015 | 7 - 8 | SW8260B | VOC | sec-Butylbenzene | 0.97 U | 0.97 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S002 | N | 4 Feb 2015 | 7 - 8 | SW8260B | VOC | Styrene | 0.97 U | 0.97 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S002 | N | 4 Feb 2015 | 7 - 8 | SW8260B | VOC | tert-Butanol (TBA) | 9.7 U | 9.7 | 48 | | µg/kg | | NC |
| SO | BVBS1293 | BVBS1293S002 | N | 4 Feb 2015 | 7 - 8 | SW8260B | VOC | tert-Butylbenzene | 0.97 U | 0.97 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S002 | N | 4 Feb 2015 | 7 - 8 | SW8260B | VOC | Tetrachloroethene | 0.97 U | 0.97 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S002 | N | 4 Feb 2015 | 7 - 8 | SW8260B | VOC | Toluene | 0.97 U | 0.97 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S002 | N | 4 Feb 2015 | 7 - 8 | SW8260B | VOC | trans-1,2-Dichloroethene | 0.97 U | 0.97 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S002 | N | 4 Feb 2015 | 7 - 8 | SW8260B | VOC | trans-1,3-Dichloropropene | 0.97 U | 0.97 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S002 | N | 4 Feb 2015 | 7 - 8 | SW8260B | VOC | Trichloroethene | 0.97 U | 0.97 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S002 | N | 4 Feb 2015 | 7 - 8 | SW8260B | VOC | Trichlorofluoromethane | 1.9 U | 1.9 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S002 | N | 4 Feb 2015 | 7 - 8 | SW8260B | VOC | Trichloromethane (Chloroform) | 0.97 U | 0.97 | 4.8 | 5 | µg/kg | | N |

APPENDIX E-2

**Analytical Data 2015 Biovent Sampling**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | SL | Units | Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1293 | BVBS1293S002 | N | 4 Feb 2015 | 7 - 8 | SW8260B | VOC | Vinyl chloride | 1.9 U | 1.9 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S003 | N | 3 Mar 2015 | 3 - 4 | SW9045D | GENCHEM | pH | 7.51 = | | | | pH units | | NC |
| SO | BVBS1293 | BVBS1293S003 | N | 3 Mar 2015 | 3 - 4 | SW8015B | HC | Diesel Range Organics (C12-C14) | 5500 U | 2800 | 5500 | 5000 | µg/kg | X | N |
| SO | BVBS1293 | BVBS1293S003 | N | 3 Mar 2015 | 3 - 4 | SW8015B | HC | Diesel Range Organics (C15-C20) | 5500 U | 2800 | 5500 | 5000 | µg/kg | X | N |
| SO | BVBS1293 | BVBS1293S003 | N | 3 Mar 2015 | 3 - 4 | SW8015B | HC | Diesel Range Organics (C21-C30) | 5500 U | 2800 | 5500 | 5000 | µg/kg | X | N |
| SO | BVBS1293 | BVBS1293S003 | N | 3 Mar 2015 | 3 - 4 | SW8015B | HC | Diesel Range Organics (C8-C11) | 5500 U | 2800 | 5500 | 1000 | µg/kg | X | RL |
| SO | BVBS1293 | BVBS1293S003 | N | 3 Mar 2015 | 3 - 4 | SW8015B | HC | GRO (C4-C12) | 1000 U | 500 | 1000 | 1000 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S003 | N | 3 Mar 2015 | 3 - 4 | SW8015B | HC | ORO (C31-C40) | 11000 U | 5500 | 11000 | 10000 | µg/kg | X | N |
| SO | BVBS1293 | BVBS1293S003 | N | 3 Mar 2015 | 3 - 4 | SW8015B | HC | TOTAL EFH(C8-C40) | 5400 J | 2800 | 5500 | 10000 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S003 | N | 3 Mar 2015 | 3 - 4 | SW8270C-SIM | PAH | 1-Methylnaphthalene | 11 U | 5.5 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1293 | BVBS1293S003 | N | 3 Mar 2015 | 3 - 4 | SW8270C-SIM | PAH | 2-Methylnaphthalene | 11 U | 5.5 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1293 | BVBS1293S003 | N | 3 Mar 2015 | 3 - 4 | SW8270C-SIM | PAH | Acenaphthene | 11 U | 5.5 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1293 | BVBS1293S003 | N | 3 Mar 2015 | 3 - 4 | SW8270C-SIM | PAH | Acenaphthylene | 11 U | 5.5 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1293 | BVBS1293S003 | N | 3 Mar 2015 | 3 - 4 | SW8270C-SIM | PAH | Anthracene | 11 U | 5.5 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1293 | BVBS1293S003 | N | 3 Mar 2015 | 3 - 4 | SW8270C-SIM | PAH | Benzo(a)anthracene | 8.5 J | 5.5 | 11 | | µg/kg | | NC |
| SO | BVBS1293 | BVBS1293S003 | N | 3 Mar 2015 | 3 - 4 | SW8270C-SIM | PAH | Benzo(a)pyrene | 8.3 J | 5.5 | 11 | | µg/kg | | NC |
| SO | BVBS1293 | BVBS1293S003 | N | 3 Mar 2015 | 3 - 4 | SW8270C-SIM | PAH | Benzo(b)fluoranthene | 7.5 J | 5.5 | 11 | | µg/kg | | NC |
| SO | BVBS1293 | BVBS1293S003 | N | 3 Mar 2015 | 3 - 4 | SW8270C-SIM | PAH | Benzo(ghi)perylene | 23 = | 5.5 | 11 | 2.5 | µg/kg | X | Y |
| SO | BVBS1293 | BVBS1293S003 | N | 3 Mar 2015 | 3 - 4 | SW8270C-SIM | PAH | Benzo(k)fluoranthene | 11 U | 5.5 | 11 | | µg/kg | | NC |
| SO | BVBS1293 | BVBS1293S003 | N | 3 Mar 2015 | 3 - 4 | SW8270C-SIM | PAH | Chrysene | 5.6 J | 5.5 | 11 | | µg/kg | | NC |
| SO | BVBS1293 | BVBS1293S003 | N | 3 Mar 2015 | 3 - 4 | SW8270C-SIM | PAH | Dibenzo(a,h)anthracene | 11 U | 5.5 | 11 | | µg/kg | | NC |
| SO | BVBS1293 | BVBS1293S003 | N | 3 Mar 2015 | 3 - 4 | SW8270C-SIM | PAH | Fluoranthene | 6.9 J | 5.5 | 11 | 5.2 | µg/kg | X | Y |
| SO | BVBS1293 | BVBS1293S003 | N | 3 Mar 2015 | 3 - 4 | SW8270C-SIM | PAH | Fluorene | 11 U | 5.5 | 11 | 3.8 | µg/kg | X | RL |
| SO | BVBS1293 | BVBS1293S003 | N | 3 Mar 2015 | 3 - 4 | SW8270C-SIM | PAH | Indeno(1,2,3-cd)pyrene | 14 = | 5.5 | 11 | | µg/kg | | NC |
| SO | BVBS1293 | BVBS1293S003 | N | 3 Mar 2015 | 3 - 4 | SW8270C-SIM | PAH | Naphthalene | 11 U | 5.5 | 11 | 3.6 | µg/kg | X | RL |
| SO | BVBS1293 | BVBS1293S003 | N | 3 Mar 2015 | 3 - 4 | SW8270C-SIM | PAH | PAHTEQM | 11.356 = | | | 4.47 | µg/kg | X | Y |
| SO | BVBS1293 | BVBS1293S003 | N | 3 Mar 2015 | 3 - 4 | SW8270C-SIM | PAH | Phenanthrene | 11 U | 5.5 | 11 | 3.9 | µg/kg | X | RL |
| SO | BVBS1293 | BVBS1293S003 | N | 3 Mar 2015 | 3 - 4 | SW8270C-SIM | PAH | Pyrene | 13 J | 5.5 | 11 | 5.6 | µg/kg | X | Y |
| SO | BVBS1293 | BVBS1293S003 | N | 3 Mar 2015 | 3 - 4 | SW8270C-SIM | PHTH | Bis(2-ethylhexyl)phthalate | 110 = | 11 | 22 | 61 | µg/kg | X | Y |
| SO | BVBS1293 | BVBS1293S003 | N | 3 Mar 2015 | 3 - 4 | SW8270C-SIM | PHTH | Butyl benzyl phthalate | 22 U | 11 | 22 | 100 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S003 | N | 3 Mar 2015 | 3 - 4 | SW8270C-SIM | PHTH | Diethyl phthalate | 22 U | 11 | 22 | 27 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S003 | N | 3 Mar 2015 | 3 - 4 | SW8270C-SIM | PHTH | Dimethyl phthalate | 22 U | 11 | 22 | 27 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S003 | N | 3 Mar 2015 | 3 - 4 | SW8270C-SIM | PHTH | Di-n-butyl phthalate | 22 U | 11 | 22 | 27 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S003 | N | 3 Mar 2015 | 3 - 4 | SW8270C-SIM | PHTH | Di-n-octyl phthalate | 22 U | 11 | 22 | 27 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S003 | N | 3 Mar 2015 | 3 - 4 | SW8260B | SVOC | Diisopropyl ether | 1.1 U | 1.1 | 11 | 10 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S003 | N | 3 Mar 2015 | 3 - 4 | SW8270C-SIM | SVOC | n-Nitrosodimethylamine | 22 U | 11 | 22 | 10 | µg/kg | X | RL |

APPENDIX E-2

**Analytical Data 2015 Biovent Sampling**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | SL | Units | Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1293 | BVBS1293S003 | N | 3 Mar 2015 | 3 - 4 | SW8260B | SVOC | tert-Amyl methyl ether | 1.1 U | 1.1 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S003 | N | 3 Mar 2015 | 3 - 4 | SW8260B | SVOC | tert-Butyl ethyl ether | 1.1 U | 1.1 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S003 | N | 3 Mar 2015 | 3 - 4 | SW8260B | VOC | 1,1,1,2-Tetrachloroethane | 1.1 U | 1.1 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S003 | N | 3 Mar 2015 | 3 - 4 | SW8260B | VOC | 1,1,1-Trichloroethane | 1.1 U | 1.1 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S003 | N | 3 Mar 2015 | 3 - 4 | SW8260B | VOC | 1,1,2,2-Tetrachloroethane | 1.1 U | 1.1 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S003 | N | 3 Mar 2015 | 3 - 4 | SW8260B | VOC | 1,1,2-Trichloro-1,2,2-trifluoroethane | 2.3 U | 2.3 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S003 | N | 3 Mar 2015 | 3 - 4 | SW8260B | VOC | 1,1,2-Trichloroethane | 1.1 U | 1.1 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S003 | N | 3 Mar 2015 | 3 - 4 | SW8260B | VOC | 1,1-Dichloroethane | 1.1 U | 1.1 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S003 | N | 3 Mar 2015 | 3 - 4 | SW8260B | VOC | 1,1-Dichloroethene | 1.1 U | 1.1 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S003 | N | 3 Mar 2015 | 3 - 4 | SW8260B | VOC | 1,1-Dichloropropene | 1.1 U | 1.1 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S003 | N | 3 Mar 2015 | 3 - 4 | SW8260B | VOC | 1,2,3-Trichlorobenzene | 2.3 U | 2.3 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S003 | N | 3 Mar 2015 | 3 - 4 | SW8260B | VOC | 1,2,3-Trichloropropane | 2.3 U | 2.3 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S003 | N | 3 Mar 2015 | 3 - 4 | SW8260B | VOC | 1,2,4-Trichlorobenzene | 2.3 U | 2.3 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S003 | N | 3 Mar 2015 | 3 - 4 | SW8260B | VOC | 1,2,4-Trimethylbenzene | 1.1 U | 1.1 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S003 | N | 3 Mar 2015 | 3 - 4 | SW8260B | VOC | 1,2-Dibromo-3-chloropropane | 2.3 U | 2.3 | 11 | 10 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S003 | N | 3 Mar 2015 | 3 - 4 | SW8260B | VOC | 1,2-Dibromoethane (EDB) | 1.1 U | 1.1 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S003 | N | 3 Mar 2015 | 3 - 4 | SW8260B | VOC | 1,2-Dichlorobenzene | 1.1 U | 1.1 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S003 | N | 3 Mar 2015 | 3 - 4 | SW8260B | VOC | 1,2-Dichloroethane | 1.1 U | 1.1 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S003 | N | 3 Mar 2015 | 3 - 4 | SW8260B | VOC | 1,2-Dichloropropane | 1.1 U | 1.1 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S003 | N | 3 Mar 2015 | 3 - 4 | SW8260B | VOC | 1,3,5-Trimethylbenzene | 1.1 U | 1.1 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S003 | N | 3 Mar 2015 | 3 - 4 | SW8260B | VOC | 1,3-Dichlorobenzene | 1.1 U | 1.1 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S003 | N | 3 Mar 2015 | 3 - 4 | SW8260B | VOC | 1,3-Dichloropropane | 1.1 U | 1.1 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S003 | N | 3 Mar 2015 | 3 - 4 | SW8260B | VOC | 1,4-Dichlorobenzene | 1.1 U | 1.1 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S003 | N | 3 Mar 2015 | 3 - 4 | SW8260B | VOC | 2,2-Dichloropropane | 2.3 U | 2.3 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S003 | N | 3 Mar 2015 | 3 - 4 | SW8260B | VOC | 2-Butanone (MEK) | 5.6 U | 5.6 | 23 | 20 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S003 | N | 3 Mar 2015 | 3 - 4 | SW8260B | VOC | 2-Chloro-1,1,1-trifluoroethane | 2.3 U | 2.3 | 11 | 10 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S003 | N | 3 Mar 2015 | 3 - 4 | SW8260B | VOC | 2-Chloroethyl vinyl ether | 2.3 U | 2.3 | 11 | 10 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S003 | N | 3 Mar 2015 | 3 - 4 | SW8260B | VOC | 2-Chlorotoluene | 1.1 U | 1.1 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S003 | N | 3 Mar 2015 | 3 - 4 | SW8260B | VOC | 2-Hexanone | 5.6 U | 5.6 | 11 | 10 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S003 | N | 3 Mar 2015 | 3 - 4 | SW8260B | VOC | 4-Chlorotoluene | 1.1 U | 1.1 | 11 | 10 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S003 | N | 3 Mar 2015 | 3 - 4 | SW8260B | VOC | 4-Methyl-2-pentanone (MIBK) | 5.6 U | 5.6 | 11 | 10 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S003 | N | 3 Mar 2015 | 3 - 4 | SW8260B | VOC | Acetone | 5.6 U | 5.6 | 23 | 20 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S003 | N | 3 Mar 2015 | 3 - 4 | SW8260B | VOC | Benzene | 1.1 U | 1.1 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S003 | N | 3 Mar 2015 | 3 - 4 | SW8260B | VOC | Bromobenzene | 1.1 U | 1.1 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S003 | N | 3 Mar 2015 | 3 - 4 | SW8260B | VOC | Bromochloromethane | 1.1 U | 1.1 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S003 | N | 3 Mar 2015 | 3 - 4 | SW8260B | VOC | Bromodichloromethane | 1.1 U | 1.1 | 5.6 | 5 | µg/kg | | N |

APPENDIX E-2

**Analytical Data 2015 Biovent Sampling**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | SL | Units | Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1293 | BVBS1293S003 | N | 3 Mar 2015 | 3 - 4 | SW8260B | VOC | Bromoform | 2.3 U | 2.3 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S003 | N | 3 Mar 2015 | 3 - 4 | SW8260B | VOC | Bromomethane | 2.3 U | 2.3 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S003 | N | 3 Mar 2015 | 3 - 4 | SW8260B | VOC | Carbon tetrachloride | 1.1 U | 1.1 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S003 | N | 3 Mar 2015 | 3 - 4 | SW8260B | VOC | Chlorobenzene | 1.1 U | 1.1 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S003 | N | 3 Mar 2015 | 3 - 4 | SW8260B | VOC | Chloroethane | 2.3 U | 2.3 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S003 | N | 3 Mar 2015 | 3 - 4 | SW8260B | VOC | Chloromethane | 2.3 U | 2.3 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S003 | N | 3 Mar 2015 | 3 - 4 | SW8260B | VOC | Chlorotrifluoroethylene | 2.3 U | 2.3 | 11 | 10 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S003 | N | 3 Mar 2015 | 3 - 4 | SW8260B | VOC | cis-1,2-Dichloroethene | 1.1 U | 1.1 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S003 | N | 3 Mar 2015 | 3 - 4 | SW8260B | VOC | cis-1,3-Dichloropropene | 1.1 U | 1.1 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S003 | N | 3 Mar 2015 | 3 - 4 | SW8260B | VOC | Dibromochloromethane | 1.1 U | 1.1 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S003 | N | 3 Mar 2015 | 3 - 4 | SW8260B | VOC | Dibromomethane | 1.1 U | 1.1 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S003 | N | 3 Mar 2015 | 3 - 4 | SW8260B | VOC | Dichlorodifluoromethane | 2.3 U | 2.3 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S003 | N | 3 Mar 2015 | 3 - 4 | SW8260B | VOC | Ethylbenzene | 1.1 U | 1.1 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S003 | N | 3 Mar 2015 | 3 - 4 | SW8260B | VOC | Hexachlorobutadiene | 2.3 U | 2.3 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S003 | N | 3 Mar 2015 | 3 - 4 | SW8260B | VOC | Isopropylbenzene | 1.1 U | 1.1 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S003 | N | 3 Mar 2015 | 3 - 4 | SW8260B | VOC | m,p-Xylenes | 2.3 U | 2.3 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S003 | N | 3 Mar 2015 | 3 - 4 | SW8260B | VOC | Methylene chloride | 2.3 U | 2.3 | 11 | 10 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S003 | N | 3 Mar 2015 | 3 - 4 | SW8260B | VOC | Methyl-tert-butyl Ether (MTBE) | 1.1 U | 1.1 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S003 | N | 3 Mar 2015 | 3 - 4 | SW8260B | VOC | n-butylbenzene | 1.1 U | 1.1 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S003 | N | 3 Mar 2015 | 3 - 4 | SW8260B | VOC | n-Propylbenzene | 1.1 U | 1.1 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S003 | N | 3 Mar 2015 | 3 - 4 | SW8260B | VOC | o-Xylene | 1.1 U | 1.1 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S003 | N | 3 Mar 2015 | 3 - 4 | SW8260B | VOC | p-Isopropyltoluene | 1.1 U | 1.1 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S003 | N | 3 Mar 2015 | 3 - 4 | SW8260B | VOC | sec-Butylbenzene | 1.1 U | 1.1 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S003 | N | 3 Mar 2015 | 3 - 4 | SW8260B | VOC | Styrene | 1.1 U | 1.1 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S003 | N | 3 Mar 2015 | 3 - 4 | SW8260B | VOC | tert-Butanol (TBA) | 11 U | 11 | 56 | | µg/kg | | NC |
| SO | BVBS1293 | BVBS1293S003 | N | 3 Mar 2015 | 3 - 4 | SW8260B | VOC | tert-Butylbenzene | 1.1 U | 1.1 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S003 | N | 3 Mar 2015 | 3 - 4 | SW8260B | VOC | Tetrachloroethene | 1.1 U | 1.1 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S003 | N | 3 Mar 2015 | 3 - 4 | SW8260B | VOC | Toluene | 1.1 U | 1.1 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S003 | N | 3 Mar 2015 | 3 - 4 | SW8260B | VOC | trans-1,2-Dichloroethene | 1.1 U | 1.1 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S003 | N | 3 Mar 2015 | 3 - 4 | SW8260B | VOC | trans-1,3-Dichloropropene | 1.1 U | 1.1 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S003 | N | 3 Mar 2015 | 3 - 4 | SW8260B | VOC | Trichloroethene | 1.1 U | 1.1 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S003 | N | 3 Mar 2015 | 3 - 4 | SW8260B | VOC | Trichlorofluoromethane | 2.3 U | 2.3 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S003 | N | 3 Mar 2015 | 3 - 4 | SW8260B | VOC | Trichloromethane (Chloroform) | 1.1 U | 1.1 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S003 | N | 3 Mar 2015 | 3 - 4 | SW8260B | VOC | Vinyl chloride | 2.3 U | 2.3 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S004 | N | 3 Mar 2015 | 7 - 8 | SW9045D | GENCHEM | pH | 6.41 = | | | | pH units | | NC |
| SO | BVBS1293 | BVBS1293S004 | N | 3 Mar 2015 | 7 - 8 | SW8015B | HC | Diesel Range Organics (C12-C14) | 5400 U | 2700 | 5400 | 5000 | µg/kg | X | N |

APPENDIX E-2

**Analytical Data 2015 Biovent Sampling**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | SL | Units | Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1293 | BVBS1293S004 | N | 3 Mar 2015 | 7 - 8 | SW8015B | HC | Diesel Range Organics (C15-C20) | 5400 U | 2700 | 5400 | 5000 | µg/kg | X | N |
| SO | BVBS1293 | BVBS1293S004 | N | 3 Mar 2015 | 7 - 8 | SW8015B | HC | Diesel Range Organics (C21-C30) | 2800 J | 2700 | 5400 | 5000 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S004 | N | 3 Mar 2015 | 7 - 8 | SW8015B | HC | Diesel Range Organics (C8-C11) | 5400 U | 2700 | 5400 | 1000 | µg/kg | X | RL |
| SO | BVBS1293 | BVBS1293S004 | N | 3 Mar 2015 | 7 - 8 | SW8015B | HC | GRO (C4-C12) | 880 U | 440 | 880 | 1000 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S004 | N | 3 Mar 2015 | 7 - 8 | SW8015B | HC | ORO (C31-C40) | 11000 U | 5400 | 11000 | 10000 | µg/kg | X | N |
| SO | BVBS1293 | BVBS1293S004 | N | 3 Mar 2015 | 7 - 8 | SW8015B | HC | TOTAL EFH(C8-C40) | 8800 = | 2700 | 5400 | 10000 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S004 | N | 3 Mar 2015 | 7 - 8 | SW8270C-SIM | PAH | 1-Methylnaphthalene | 11 U | 5.4 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1293 | BVBS1293S004 | N | 3 Mar 2015 | 7 - 8 | SW8270C-SIM | PAH | 2-Methylnaphthalene | 11 U | 5.4 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1293 | BVBS1293S004 | N | 3 Mar 2015 | 7 - 8 | SW8270C-SIM | PAH | Acenaphthene | 11 U | 5.4 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1293 | BVBS1293S004 | N | 3 Mar 2015 | 7 - 8 | SW8270C-SIM | PAH | Acenaphthylene | 11 U | 5.4 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1293 | BVBS1293S004 | N | 3 Mar 2015 | 7 - 8 | SW8270C-SIM | PAH | Anthracene | 11 U | 5.4 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1293 | BVBS1293S004 | N | 3 Mar 2015 | 7 - 8 | SW8270C-SIM | PAH | Benzo(a)anthracene | 11 U | 5.4 | 11 | | µg/kg | | NC |
| SO | BVBS1293 | BVBS1293S004 | N | 3 Mar 2015 | 7 - 8 | SW8270C-SIM | PAH | Benzo(a)pyrene | 11 U | 5.4 | 11 | | µg/kg | | NC |
| SO | BVBS1293 | BVBS1293S004 | N | 3 Mar 2015 | 7 - 8 | SW8270C-SIM | PAH | Benzo(b)fluoranthene | 11 U | 5.4 | 11 | | µg/kg | | NC |
| SO | BVBS1293 | BVBS1293S004 | N | 3 Mar 2015 | 7 - 8 | SW8270C-SIM | PAH | Benzo(ghi)perylene | 11 U | 5.4 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1293 | BVBS1293S004 | N | 3 Mar 2015 | 7 - 8 | SW8270C-SIM | PAH | Benzo(k)fluoranthene | 11 U | 5.4 | 11 | | µg/kg | | NC |
| SO | BVBS1293 | BVBS1293S004 | N | 3 Mar 2015 | 7 - 8 | SW8270C-SIM | PAH | Chrysene | 11 U | 5.4 | 11 | | µg/kg | | NC |
| SO | BVBS1293 | BVBS1293S004 | N | 3 Mar 2015 | 7 - 8 | SW8270C-SIM | PAH | Dibenzo(a,h)anthracene | 11 U | 5.4 | 11 | | µg/kg | | NC |
| SO | BVBS1293 | BVBS1293S004 | N | 3 Mar 2015 | 7 - 8 | SW8270C-SIM | PAH | Fluoranthene | 11 U | 5.4 | 11 | 5.2 | µg/kg | X | RL |
| SO | BVBS1293 | BVBS1293S004 | N | 3 Mar 2015 | 7 - 8 | SW8270C-SIM | PAH | Fluorene | 11 U | 5.4 | 11 | 3.8 | µg/kg | X | RL |
| SO | BVBS1293 | BVBS1293S004 | N | 3 Mar 2015 | 7 - 8 | SW8270C-SIM | PAH | Indeno(1,2,3-cd)pyrene | 11 U | 5.4 | 11 | | µg/kg | | NC |
| SO | BVBS1293 | BVBS1293S004 | N | 3 Mar 2015 | 7 - 8 | SW8270C-SIM | PAH | Naphthalene | 11 U | 5.4 | 11 | 3.6 | µg/kg | X | RL |
| SO | BVBS1293 | BVBS1293S004 | N | 3 Mar 2015 | 7 - 8 | SW8270C-SIM | PAH | PAHTEQM | 0 U | | | 4.47 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S004 | N | 3 Mar 2015 | 7 - 8 | SW8270C-SIM | PAH | Phenanthrene | 11 U | 5.4 | 11 | 3.9 | µg/kg | X | RL |
| SO | BVBS1293 | BVBS1293S004 | N | 3 Mar 2015 | 7 - 8 | SW8270C-SIM | PAH | Pyrene | 11 U | 5.4 | 11 | 5.6 | µg/kg | X | N |
| SO | BVBS1293 | BVBS1293S004 | N | 3 Mar 2015 | 7 - 8 | SW8270C-SIM | PHTH | Bis(2-ethylhexyl)phthalate | 25 = | 11 | 22 | 61 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S004 | N | 3 Mar 2015 | 7 - 8 | SW8270C-SIM | PHTH | Butyl benzyl phthalate | 22 U | 11 | 22 | 100 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S004 | N | 3 Mar 2015 | 7 - 8 | SW8270C-SIM | PHTH | Diethyl phthalate | 22 U | 11 | 22 | 27 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S004 | N | 3 Mar 2015 | 7 - 8 | SW8270C-SIM | PHTH | Dimethyl phthalate | 22 U | 11 | 22 | 27 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S004 | N | 3 Mar 2015 | 7 - 8 | SW8270C-SIM | PHTH | Di-n-butyl phthalate | 22 U | 11 | 22 | 27 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S004 | N | 3 Mar 2015 | 7 - 8 | SW8270C-SIM | PHTH | Di-n-octyl phthalate | 22 U | 11 | 22 | 27 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S004 | N | 3 Mar 2015 | 7 - 8 | SW8260B | SVOC | Diisopropyl ether | 0.87 U | 0.87 | 8.7 | 10 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S004 | N | 3 Mar 2015 | 7 - 8 | SW8270C-SIM | SVOC | n-Nitrosodimethylamine | 22 U | 11 | 22 | 10 | µg/kg | X | RL |
| SO | BVBS1293 | BVBS1293S004 | N | 3 Mar 2015 | 7 - 8 | SW8260B | SVOC | tert-Amyl methyl ether | 0.87 U | 0.87 | 4.3 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S004 | N | 3 Mar 2015 | 7 - 8 | SW8260B | SVOC | tert-Butyl ethyl ether | 0.87 U | 0.87 | 4.3 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S004 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | 1,1,1,2-Tetrachloroethane | 0.87 U | 0.87 | 4.3 | 5 | µg/kg | | N |

APPENDIX E-2

**Analytical Data 2015 Biovent Sampling**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | SL | Units | Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1293 | BVBS1293S004 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | 1,1,1-Trichloroethane | 0.87 U | 0.87 | 4.3 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S004 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | 1,1,2,2-Tetrachloroethane | 0.87 U | 0.87 | 4.3 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S004 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | 1,1,2-Trichloro-1,2,2-trifluoroethane | 1.7 U | 1.7 | 4.3 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S004 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | 1,1,2-Trichloroethane | 0.87 U | 0.87 | 4.3 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S004 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | 1,1-Dichloroethane | 0.87 U | 0.87 | 4.3 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S004 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | 1,1-Dichloroethene | 0.87 U | 0.87 | 4.3 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S004 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | 1,1-Dichloropropene | 0.87 U | 0.87 | 4.3 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S004 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | 1,2,3-Trichlorobenzene | 1.7 U | 1.7 | 4.3 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S004 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | 1,2,3-Trichloropropane | 1.7 U | 1.7 | 4.3 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S004 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | 1,2,4-Trichlorobenzene | 1.7 U | 1.7 | 4.3 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S004 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | 1,2,4-Trimethylbenzene | 0.87 U | 0.87 | 4.3 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S004 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | 1,2-Dibromo-3-chloropropane | 1.7 U | 1.7 | 8.7 | 10 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S004 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | 1,2-Dibromoethane (EDB) | 0.87 U | 0.87 | 4.3 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S004 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | 1,2-Dichlorobenzene | 0.87 U | 0.87 | 4.3 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S004 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | 1,2-Dichloroethane | 0.87 U | 0.87 | 4.3 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S004 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | 1,2-Dichloropropane | 0.87 U | 0.87 | 4.3 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S004 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | 1,3,5-Trimethylbenzene | 0.87 U | 0.87 | 4.3 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S004 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | 1,3-Dichlorobenzene | 0.87 U | 0.87 | 4.3 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S004 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | 1,3-Dichloropropane | 0.87 U | 0.87 | 4.3 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S004 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | 1,4-Dichlorobenzene | 0.87 U | 0.87 | 4.3 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S004 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | 2,2-Dichloropropane | 1.7 U | 1.7 | 4.3 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S004 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | 2-Butanone (MEK) | 4.3 U | 4.3 | 17 | 20 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S004 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | 2-Chloro-1,1,1-trifluoroethane | 1.7 U | 1.7 | 8.7 | 10 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S004 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | 2-Chloroethyl vinyl ether | 1.7 U | 1.7 | 8.7 | 10 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S004 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | 2-Chlorotoluene | 0.87 U | 0.87 | 4.3 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S004 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | 2-Hexanone | 4.3 U | 4.3 | 8.7 | 10 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S004 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | 4-Chlorotoluene | 0.87 U | 0.87 | 8.7 | 10 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S004 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | 4-Methyl-2-pentanone (MIBK) | 4.3 U | 4.3 | 8.7 | 10 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S004 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | Acetone | 4.3 U | 4.3 | 17 | 20 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S004 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | Benzene | 0.87 U | 0.87 | 4.3 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S004 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | Bromobenzene | 0.87 U | 0.87 | 4.3 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S004 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | Bromochloromethane | 0.87 U | 0.87 | 4.3 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S004 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | Bromodichloromethane | 0.87 U | 0.87 | 4.3 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S004 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | Bromoform | 1.7 U | 1.7 | 4.3 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S004 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | Bromomethane | 1.7 U | 1.7 | 4.3 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S004 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | Carbon tetrachloride | 0.87 U | 0.87 | 4.3 | 5 | µg/kg | | N |

APPENDIX E-2

**Analytical Data 2015 Biovent Sampling**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | SL | Units | Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1293 | BVBS1293S004 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | Chlorobenzene | 0.87 U | 0.87 | 4.3 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S004 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | Chloroethane | 1.7 U | 1.7 | 4.3 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S004 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | Chloromethane | 1.7 U | 1.7 | 4.3 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S004 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | Chlorotrifluoroethylene | 1.7 U | 1.7 | 8.7 | 10 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S004 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | cis-1,2-Dichloroethene | 0.87 U | 0.87 | 4.3 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S004 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | cis-1,3-Dichloropropene | 0.87 U | 0.87 | 4.3 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S004 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | Dibromochloromethane | 0.87 U | 0.87 | 4.3 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S004 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | Dibromomethane | 0.87 U | 0.87 | 4.3 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S004 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | Dichlorodifluoromethane | 1.7 U | 1.7 | 4.3 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S004 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | Ethylbenzene | 0.87 U | 0.87 | 4.3 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S004 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | Hexachlorobutadiene | 1.7 U | 1.7 | 4.3 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S004 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | Isopropylbenzene | 0.87 U | 0.87 | 4.3 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S004 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | m,p-Xylenes | 1.7 U | 1.7 | 4.3 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S004 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | Methylene chloride | 1.7 U | 1.7 | 8.7 | 10 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S004 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | Methyl-tert-butyl Ether (MTBE) | 0.87 U | 0.87 | 4.3 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S004 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | n-butylbenzene | 0.87 U | 0.87 | 4.3 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S004 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | n-Propylbenzene | 0.87 U | 0.87 | 4.3 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S004 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | o-Xylene | 0.87 U | 0.87 | 4.3 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S004 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | p-Isopropyltoluene | 0.87 U | 0.87 | 4.3 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S004 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | sec-Butylbenzene | 0.87 U | 0.87 | 4.3 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S004 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | Styrene | 0.87 U | 0.87 | 4.3 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S004 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | tert-Butanol (TBA) | 8.7 U | 8.7 | 43 | | µg/kg | | NC |
| SO | BVBS1293 | BVBS1293S004 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | tert-Butylbenzene | 0.87 U | 0.87 | 4.3 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S004 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | Tetrachloroethene | 0.87 U | 0.87 | 4.3 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S004 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | Toluene | 0.87 U | 0.87 | 4.3 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S004 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | trans-1,2-Dichloroethene | 0.87 U | 0.87 | 4.3 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S004 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | trans-1,3-Dichloropropene | 0.87 U | 0.87 | 4.3 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S004 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | Trichloroethene | 0.87 U | 0.87 | 4.3 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S004 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | Trichlorofluoromethane | 1.7 U | 1.7 | 4.3 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S004 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | Trichloromethane (Chloroform) | 0.87 U | 0.87 | 4.3 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S004 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | Vinyl chloride | 1.7 U | 1.7 | 4.3 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S005 | N | 10 Apr 2015 | 3 - 4 | SW9045D | GENCHEM | pH | 6.49 = | | | | pH units | | NC |
| SO | BVBS1293 | BVBS1293S005 | N | 10 Apr 2015 | 3 - 4 | M8015D | HC | Diesel Range Organics (C12-C14) | 5800 U | 2900 | 5800 | 5000 | µg/kg | X | N |
| SO | BVBS1293 | BVBS1293S005 | N | 10 Apr 2015 | 3 - 4 | M8015D | HC | Diesel Range Organics (C15-C20) | 8100 = | 2900 | 5800 | 5000 | µg/kg | X | Y |
| SO | BVBS1293 | BVBS1293S005 | N | 10 Apr 2015 | 3 - 4 | M8015D | HC | Diesel Range Organics (C21-C30) | 9600 = | 2900 | 5800 | 5000 | µg/kg | X | Y |
| SO | BVBS1293 | BVBS1293S005 | N | 10 Apr 2015 | 3 - 4 | M8015D | HC | Diesel Range Organics (C8-C11) | 5800 U | 2900 | 5800 | 1000 | µg/kg | X | RL |

APPENDIX E-2

**Analytical Data 2015 Biovent Sampling**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | SL | Units | Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1293 | BVBS1293S005 | N | 10 Apr 2015 | 3 - 4 | SW8015B | HC | GRO (C4-C12) | 1100 U | 570 | 1100 | 1000 | µg/kg | X | N |
| SO | BVBS1293 | BVBS1293S005 | N | 10 Apr 2015 | 3 - 4 | M8015D | HC | ORO (C31-C40) | 12000 U | 5800 | 12000 | 10000 | µg/kg | X | N |
| SO | BVBS1293 | BVBS1293S005 | N | 10 Apr 2015 | 3 - 4 | M8015D | HC | TOTAL EFH(C8-C40) | 24000 U | 2900 | 5800 | 10000 | µg/kg | X | N |
| SO | BVBS1293 | BVBS1293S005 | N | 10 Apr 2015 | 3 - 4 | SW8270C-SIM | PAH | 1-Methylnaphthalene | 12 U | 5.8 | 12 | 2.5 | µg/kg | X | RL |
| SO | BVBS1293 | BVBS1293S005 | N | 10 Apr 2015 | 3 - 4 | SW8270C-SIM | PAH | 2-Methylnaphthalene | 12 U | 5.8 | 12 | 2.5 | µg/kg | X | RL |
| SO | BVBS1293 | BVBS1293S005 | N | 10 Apr 2015 | 3 - 4 | SW8270C-SIM | PAH | Acenaphthene | 12 U | 5.8 | 12 | 2.5 | µg/kg | X | RL |
| SO | BVBS1293 | BVBS1293S005 | N | 10 Apr 2015 | 3 - 4 | SW8270C-SIM | PAH | Acenaphthylene | 12 U | 5.8 | 12 | 2.5 | µg/kg | X | RL |
| SO | BVBS1293 | BVBS1293S005 | N | 10 Apr 2015 | 3 - 4 | SW8270C-SIM | PAH | Anthracene | 12 U | 5.8 | 12 | 2.5 | µg/kg | X | RL |
| SO | BVBS1293 | BVBS1293S005 | N | 10 Apr 2015 | 3 - 4 | SW8270C-SIM | PAH | Benzo(a)anthracene | 12 U | 5.8 | 12 |  | µg/kg |  | NC |
| SO | BVBS1293 | BVBS1293S005 | N | 10 Apr 2015 | 3 - 4 | SW8270C-SIM | PAH | Benzo(a)pyrene | 12 U | 5.8 | 12 |  | µg/kg |  | NC |
| SO | BVBS1293 | BVBS1293S005 | N | 10 Apr 2015 | 3 - 4 | SW8270C-SIM | PAH | Benzo(b)fluoranthene | 12 U | 5.8 | 12 |  | µg/kg |  | NC |
| SO | BVBS1293 | BVBS1293S005 | N | 10 Apr 2015 | 3 - 4 | SW8270C-SIM | PAH | Benzo(ghi)perylene | 6.5 J | 5.8 | 12 | 2.5 | µg/kg | X | Y |
| SO | BVBS1293 | BVBS1293S005 | N | 10 Apr 2015 | 3 - 4 | SW8270C-SIM | PAH | Benzo(k)fluoranthene | 12 U | 5.8 | 12 |  | µg/kg |  | NC |
| SO | BVBS1293 | BVBS1293S005 | N | 10 Apr 2015 | 3 - 4 | SW8270C-SIM | PAH | Chrysene | 12 U | 5.8 | 12 |  | µg/kg |  | NC |
| SO | BVBS1293 | BVBS1293S005 | N | 10 Apr 2015 | 3 - 4 | SW8270C-SIM | PAH | Dibenzo(a,h)anthracene | 12 U | 5.8 | 12 |  | µg/kg |  | NC |
| SO | BVBS1293 | BVBS1293S005 | N | 10 Apr 2015 | 3 - 4 | SW8270C-SIM | PAH | Fluoranthene | 12 U | 5.8 | 12 | 5.2 | µg/kg | X | RL |
| SO | BVBS1293 | BVBS1293S005 | N | 10 Apr 2015 | 3 - 4 | SW8270C-SIM | PAH | Fluorene | 12 U | 5.8 | 12 | 3.8 | µg/kg | X | RL |
| SO | BVBS1293 | BVBS1293S005 | N | 10 Apr 2015 | 3 - 4 | SW8270C-SIM | PAH | Indeno(1,2,3-cd)pyrene | 12 U | 5.8 | 12 |  | µg/kg |  | NC |
| SO | BVBS1293 | BVBS1293S005 | N | 10 Apr 2015 | 3 - 4 | SW8270C-SIM | PAH | Naphthalene | 12 U | 5.8 | 12 | 3.6 | µg/kg | X | RL |
| SO | BVBS1293 | BVBS1293S005 | N | 10 Apr 2015 | 3 - 4 | SW8270C-SIM | PAH | PAHTEQM | 0 U |  |  | 4.47 | µg/kg |  | N |
| SO | BVBS1293 | BVBS1293S005 | N | 10 Apr 2015 | 3 - 4 | SW8270C-SIM | PAH | Phenanthrene | 12 U | 5.8 | 12 | 3.9 | µg/kg | X | RL |
| SO | BVBS1293 | BVBS1293S005 | N | 10 Apr 2015 | 3 - 4 | SW8270C-SIM | PAH | Pyrene | 7.7 J | 5.8 | 12 | 5.6 | µg/kg | X | Y |
| SO | BVBS1293 | BVBS1293S005 | N | 10 Apr 2015 | 3 - 4 | SW8270C-SIM | PHTH | Bis(2-ethylhexyl)phthalate | 28 U | 12 | 23 | 61 | µg/kg |  | N |
| SO | BVBS1293 | BVBS1293S005 | N | 10 Apr 2015 | 3 - 4 | SW8270C-SIM | PHTH | Butyl benzyl phthalate | 23 U | 12 | 23 | 100 | µg/kg |  | N |
| SO | BVBS1293 | BVBS1293S005 | N | 10 Apr 2015 | 3 - 4 | SW8270C-SIM | PHTH | Diethyl phthalate | 23 U | 12 | 23 | 27 | µg/kg |  | N |
| SO | BVBS1293 | BVBS1293S005 | N | 10 Apr 2015 | 3 - 4 | SW8270C-SIM | PHTH | Dimethyl phthalate | 23 U | 12 | 23 | 27 | µg/kg |  | N |
| SO | BVBS1293 | BVBS1293S005 | N | 10 Apr 2015 | 3 - 4 | SW8270C-SIM | PHTH | Di-n-butyl phthalate | 23 U | 12 | 23 | 27 | µg/kg |  | N |
| SO | BVBS1293 | BVBS1293S005 | N | 10 Apr 2015 | 3 - 4 | SW8270C-SIM | PHTH | Di-n-octyl phthalate | 23 U | 12 | 23 | 27 | µg/kg |  | N |
| SO | BVBS1293 | BVBS1293S005 | N | 10 Apr 2015 | 3 - 4 | SW8260B | SVOC | Diisopropyl ether | 1 U | 1 | 10 | 10 | µg/kg |  | N |
| SO | BVBS1293 | BVBS1293S005 | N | 10 Apr 2015 | 3 - 4 | SW8270C-SIM | SVOC | n-Nitrosodimethylamine | 23 U | 12 | 23 | 10 | µg/kg | X | RL |
| SO | BVBS1293 | BVBS1293S005 | N | 10 Apr 2015 | 3 - 4 | SW8260B | SVOC | tert-Amyl methyl ether | 1 U | 1 | 5 | 5 | µg/kg |  | N |
| SO | BVBS1293 | BVBS1293S005 | N | 10 Apr 2015 | 3 - 4 | SW8260B | SVOC | tert-Butyl ethyl ether | 1 U | 1 | 5 | 5 | µg/kg |  | N |
| SO | BVBS1293 | BVBS1293S005 | N | 10 Apr 2015 | 3 - 4 | SW8260B | VOC | 1,1,1,2-Tetrachloroethane | 1 U | 1 | 5 | 5 | µg/kg |  | N |
| SO | BVBS1293 | BVBS1293S005 | N | 10 Apr 2015 | 3 - 4 | SW8260B | VOC | 1,1,1-Trichloroethane | 5.2 = | 1 | 5 | 5 | µg/kg | X | Y |
| SO | BVBS1293 | BVBS1293S005 | N | 10 Apr 2015 | 3 - 4 | SW8260B | VOC | 1,1,2,2-Tetrachloroethane | 1 U | 1 | 5 | 5 | µg/kg |  | N |
| SO | BVBS1293 | BVBS1293S005 | N | 10 Apr 2015 | 3 - 4 | SW8260B | VOC | 1,1,2-Trichloro-1,2,2-trifluoroethane | 2 U | 2 | 5 | 5 | µg/kg |  | N |

APPENDIX E-2

**Analytical Data 2015 Biovent Sampling**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | SL | Units | Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1293 | BVBS1293S005 | N | 10 Apr 2015 | 3 - 4 | SW8260B | VOC | 1,1,2-Trichloroethane | 1 U | 1 | 5 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S005 | N | 10 Apr 2015 | 3 - 4 | SW8260B | VOC | 1,1-Dichloroethane | 1.3 J | 1 | 5 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S005 | N | 10 Apr 2015 | 3 - 4 | SW8260B | VOC | 1,1-Dichloroethene | 1 U | 1 | 5 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S005 | N | 10 Apr 2015 | 3 - 4 | SW8260B | VOC | 1,1-Dichloropropene | 1 U | 1 | 5 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S005 | N | 10 Apr 2015 | 3 - 4 | SW8260B | VOC | 1,2,3-Trichlorobenzene | 2 U | 2 | 5 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S005 | N | 10 Apr 2015 | 3 - 4 | SW8260B | VOC | 1,2,3-Trichloropropane | 2 U | 2 | 5 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S005 | N | 10 Apr 2015 | 3 - 4 | SW8260B | VOC | 1,2,4-Trichlorobenzene | 2 U | 2 | 5 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S005 | N | 10 Apr 2015 | 3 - 4 | SW8260B | VOC | 1,2,4-Trimethylbenzene | 1 U | 1 | 5 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S005 | N | 10 Apr 2015 | 3 - 4 | SW8260B | VOC | 1,2-Dibromo-3-chloropropane | 2 U | 2 | 10 | 10 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S005 | N | 10 Apr 2015 | 3 - 4 | SW8260B | VOC | 1,2-Dibromoethane (EDB) | 1 U | 1 | 5 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S005 | N | 10 Apr 2015 | 3 - 4 | SW8260B | VOC | 1,2-Dichlorobenzene | 1 U | 1 | 5 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S005 | N | 10 Apr 2015 | 3 - 4 | SW8260B | VOC | 1,2-Dichloroethane | 1 U | 1 | 5 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S005 | N | 10 Apr 2015 | 3 - 4 | SW8260B | VOC | 1,2-Dichloropropane | 1 U | 1 | 5 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S005 | N | 10 Apr 2015 | 3 - 4 | SW8260B | VOC | 1,3,5-Trimethylbenzene | 1 U | 1 | 5 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S005 | N | 10 Apr 2015 | 3 - 4 | SW8260B | VOC | 1,3-Dichlorobenzene | 1 U | 1 | 5 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S005 | N | 10 Apr 2015 | 3 - 4 | SW8260B | VOC | 1,3-Dichloropropane | 1 U | 1 | 5 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S005 | N | 10 Apr 2015 | 3 - 4 | SW8260B | VOC | 1,4-Dichlorobenzene | 1 U | 1 | 5 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S005 | N | 10 Apr 2015 | 3 - 4 | SW8260B | VOC | 2,2-Dichloropropane | 2 U | 2 | 5 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S005 | N | 10 Apr 2015 | 3 - 4 | SW8260B | VOC | 2-Butanone (MEK) | 5 U | 5 | 20 | 20 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S005 | N | 10 Apr 2015 | 3 - 4 | SW8260B | VOC | 2-Chloro-1,1,1-trifluoroethane | 2 U | 2 | 10 | 10 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S005 | N | 10 Apr 2015 | 3 - 4 | SW8260B | VOC | 2-Chloroethyl vinyl ether | 2 U | 2 | 10 | 10 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S005 | N | 10 Apr 2015 | 3 - 4 | SW8260B | VOC | 2-Chlorotoluene | 1 U | 1 | 5 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S005 | N | 10 Apr 2015 | 3 - 4 | SW8260B | VOC | 2-Hexanone | 5 U | 5 | 10 | 10 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S005 | N | 10 Apr 2015 | 3 - 4 | SW8260B | VOC | 4-Chlorotoluene | 1 U | 1 | 10 | 10 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S005 | N | 10 Apr 2015 | 3 - 4 | SW8260B | VOC | 4-Methyl-2-pentanone (MIBK) | 5 U | 5 | 10 | 10 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S005 | N | 10 Apr 2015 | 3 - 4 | SW8260B | VOC | Acetone | 13 J | 5 | 20 | 20 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S005 | N | 10 Apr 2015 | 3 - 4 | SW8260B | VOC | Benzene | 1 U | 1 | 5 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S005 | N | 10 Apr 2015 | 3 - 4 | SW8260B | VOC | Bromobenzene | 1 U | 1 | 5 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S005 | N | 10 Apr 2015 | 3 - 4 | SW8260B | VOC | Bromochloromethane | 1 U | 1 | 5 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S005 | N | 10 Apr 2015 | 3 - 4 | SW8260B | VOC | Bromodichloromethane | 1 U | 1 | 5 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S005 | N | 10 Apr 2015 | 3 - 4 | SW8260B | VOC | Bromoform | 2 U | 2 | 5 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S005 | N | 10 Apr 2015 | 3 - 4 | SW8260B | VOC | Bromomethane | 2 U | 2 | 5 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S005 | N | 10 Apr 2015 | 3 - 4 | SW8260B | VOC | Carbon tetrachloride | 1 U | 1 | 5 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S005 | N | 10 Apr 2015 | 3 - 4 | SW8260B | VOC | Chlorobenzene | 1 U | 1 | 5 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S005 | N | 10 Apr 2015 | 3 - 4 | SW8260B | VOC | Chloroethane | 2 U | 2 | 5 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S005 | N | 10 Apr 2015 | 3 - 4 | SW8260B | VOC | Chloromethane | 2 U | 2 | 5 | 5 | µg/kg | | N |

APPENDIX E-2

**Analytical Data 2015 Biovent Sampling**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | SL | Units | Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1293 | BVBS1293S005 | N | 10 Apr 2015 | 3 - 4 | SW8260B | VOC | Chlorotrifluoroethylene | 2 U | 2 | 10 | 10 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S005 | N | 10 Apr 2015 | 3 - 4 | SW8260B | VOC | cis-1,2-Dichloroethene | 1 U | 1 | 5 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S005 | N | 10 Apr 2015 | 3 - 4 | SW8260B | VOC | cis-1,3-Dichloropropene | 1 U | 1 | 5 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S005 | N | 10 Apr 2015 | 3 - 4 | SW8260B | VOC | Dibromochloromethane | 1 U | 1 | 5 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S005 | N | 10 Apr 2015 | 3 - 4 | SW8260B | VOC | Dibromomethane | 1 U | 1 | 5 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S005 | N | 10 Apr 2015 | 3 - 4 | SW8260B | VOC | Dichlorodifluoromethane | 2 U | 2 | 5 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S005 | N | 10 Apr 2015 | 3 - 4 | SW8260B | VOC | Ethylbenzene | 1 U | 1 | 5 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S005 | N | 10 Apr 2015 | 3 - 4 | SW8260B | VOC | Hexachlorobutadiene | 2 U | 2 | 5 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S005 | N | 10 Apr 2015 | 3 - 4 | SW8260B | VOC | Isopropylbenzene | 1 U | 1 | 5 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S005 | N | 10 Apr 2015 | 3 - 4 | SW8260B | VOC | m,p-Xylenes | 2 U | 2 | 5 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S005 | N | 10 Apr 2015 | 3 - 4 | SW8260B | VOC | Methylene chloride | 2.4 J | 2 | 10 | 10 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S005 | N | 10 Apr 2015 | 3 - 4 | SW8260B | VOC | Methyl-tert-butyl Ether (MTBE) | 1 U | 1 | 5 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S005 | N | 10 Apr 2015 | 3 - 4 | SW8260B | VOC | n-butylbenzene | 1 U | 1 | 5 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S005 | N | 10 Apr 2015 | 3 - 4 | SW8260B | VOC | n-Propylbenzene | 1 U | 1 | 5 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S005 | N | 10 Apr 2015 | 3 - 4 | SW8260B | VOC | o-Xylene | 1 U | 1 | 5 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S005 | N | 10 Apr 2015 | 3 - 4 | SW8260B | VOC | p-Isopropyltoluene | 1 U | 1 | 5 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S005 | N | 10 Apr 2015 | 3 - 4 | SW8260B | VOC | sec-Butylbenzene | 1 U | 1 | 5 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S005 | N | 10 Apr 2015 | 3 - 4 | SW8260B | VOC | Styrene | 1 U | 1 | 5 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S005 | N | 10 Apr 2015 | 3 - 4 | SW8260B | VOC | tert-Butanol (TBA) | 10 U | 10 | 50 | | µg/kg | | NC |
| SO | BVBS1293 | BVBS1293S005 | N | 10 Apr 2015 | 3 - 4 | SW8260B | VOC | tert-Butylbenzene | 1 U | 1 | 5 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S005 | N | 10 Apr 2015 | 3 - 4 | SW8260B | VOC | Tetrachloroethene | 1 U | 1 | 5 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S005 | N | 10 Apr 2015 | 3 - 4 | SW8260B | VOC | Toluene | 1 U | 1 | 5 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S005 | N | 10 Apr 2015 | 3 - 4 | SW8260B | VOC | trans-1,2-Dichloroethene | 1 U | 1 | 5 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S005 | N | 10 Apr 2015 | 3 - 4 | SW8260B | VOC | trans-1,3-Dichloropropene | 1 U | 1 | 5 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S005 | N | 10 Apr 2015 | 3 - 4 | SW8260B | VOC | Trichloroethene | 1 U | 1 | 5 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S005 | N | 10 Apr 2015 | 3 - 4 | SW8260B | VOC | Trichlorofluoromethane | 2 U | 2 | 5 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S005 | N | 10 Apr 2015 | 3 - 4 | SW8260B | VOC | Trichloromethane (Chloroform) | 1 U | 1 | 5 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S005 | N | 10 Apr 2015 | 3 - 4 | SW8260B | VOC | Vinyl chloride | 2 U | 2 | 5 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S006 | N | 10 Apr 2015 | 7 - 8 | SW9045D | GENCHEM | pH | 7.1 = | | | | pH units | | NC |
| SO | BVBS1293 | BVBS1293S006 | N | 10 Apr 2015 | 7 - 8 | M8015D | HC | Diesel Range Organics (C12-C14) | 4000 J | 2900 | 5800 | 5000 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S006 | N | 10 Apr 2015 | 7 - 8 | M8015D | HC | Diesel Range Organics (C15-C20) | 4600 J | 2900 | 5800 | 5000 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S006 | N | 10 Apr 2015 | 7 - 8 | M8015D | HC | Diesel Range Organics (C21-C30) | 3400 J | 2900 | 5800 | 5000 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S006 | N | 10 Apr 2015 | 7 - 8 | M8015D | HC | Diesel Range Organics (C8-C11) | 5800 U | 2900 | 5800 | 1000 | µg/kg | X | RL |
| SO | BVBS1293 | BVBS1293S006 | N | 10 Apr 2015 | 7 - 8 | SW8015B | HC | GRO (C4-C12) | 1700 = | 470 | 930 | 1000 | µg/kg | X | Y |
| SO | BVBS1293 | BVBS1293S006 | N | 10 Apr 2015 | 7 - 8 | M8015D | HC | ORO (C31-C40) | 12000 U | 5800 | 12000 | 10000 | µg/kg | X | N |
| SO | BVBS1293 | BVBS1293S006 | N | 10 Apr 2015 | 7 - 8 | M8015D | HC | TOTAL EFH(C8-C40) | 15000 U | 2900 | 5800 | 10000 | µg/kg | X | N |

APPENDIX E-2

**Analytical Data 2015 Biovent Sampling**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | SL | Units | Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1293 | BVBS1293S006 | N | 10 Apr 2015 | 7 - 8 | SW8270C-SIM | PAH | 1-Methylnaphthalene | 12 U | 5.8 | 12 | 2.5 | µg/kg | X | RL |
| SO | BVBS1293 | BVBS1293S006 | N | 10 Apr 2015 | 7 - 8 | SW8270C-SIM | PAH | 2-Methylnaphthalene | 12 U | 5.8 | 12 | 2.5 | µg/kg | X | RL |
| SO | BVBS1293 | BVBS1293S006 | N | 10 Apr 2015 | 7 - 8 | SW8270C-SIM | PAH | Acenaphthene | 12 U | 5.8 | 12 | 2.5 | µg/kg | X | RL |
| SO | BVBS1293 | BVBS1293S006 | N | 10 Apr 2015 | 7 - 8 | SW8270C-SIM | PAH | Acenaphthylene | 12 U | 5.8 | 12 | 2.5 | µg/kg | X | RL |
| SO | BVBS1293 | BVBS1293S006 | N | 10 Apr 2015 | 7 - 8 | SW8270C-SIM | PAH | Anthracene | 12 U | 5.8 | 12 | 2.5 | µg/kg | X | RL |
| SO | BVBS1293 | BVBS1293S006 | N | 10 Apr 2015 | 7 - 8 | SW8270C-SIM | PAH | Benzo(a)anthracene | 12 U | 5.8 | 12 |  | µg/kg |  | NC |
| SO | BVBS1293 | BVBS1293S006 | N | 10 Apr 2015 | 7 - 8 | SW8270C-SIM | PAH | Benzo(a)pyrene | 12 U | 5.8 | 12 |  | µg/kg |  | NC |
| SO | BVBS1293 | BVBS1293S006 | N | 10 Apr 2015 | 7 - 8 | SW8270C-SIM | PAH | Benzo(b)fluoranthene | 12 U | 5.8 | 12 |  | µg/kg |  | NC |
| SO | BVBS1293 | BVBS1293S006 | N | 10 Apr 2015 | 7 - 8 | SW8270C-SIM | PAH | Benzo(ghi)perylene | 12 U | 5.8 | 12 | 2.5 | µg/kg | X | RL |
| SO | BVBS1293 | BVBS1293S006 | N | 10 Apr 2015 | 7 - 8 | SW8270C-SIM | PAH | Benzo(k)fluoranthene | 12 U | 5.8 | 12 |  | µg/kg |  | NC |
| SO | BVBS1293 | BVBS1293S006 | N | 10 Apr 2015 | 7 - 8 | SW8270C-SIM | PAH | Chrysene | 12 U | 5.8 | 12 |  | µg/kg |  | NC |
| SO | BVBS1293 | BVBS1293S006 | N | 10 Apr 2015 | 7 - 8 | SW8270C-SIM | PAH | Dibenzo(a,h)anthracene | 12 U | 5.8 | 12 |  | µg/kg |  | NC |
| SO | BVBS1293 | BVBS1293S006 | N | 10 Apr 2015 | 7 - 8 | SW8270C-SIM | PAH | Fluoranthene | 12 U | 5.8 | 12 | 5.2 | µg/kg | X | RL |
| SO | BVBS1293 | BVBS1293S006 | N | 10 Apr 2015 | 7 - 8 | SW8270C-SIM | PAH | Fluorene | 12 U | 5.8 | 12 | 3.8 | µg/kg | X | RL |
| SO | BVBS1293 | BVBS1293S006 | N | 10 Apr 2015 | 7 - 8 | SW8270C-SIM | PAH | Indeno(1,2,3-cd)pyrene | 12 U | 5.8 | 12 |  | µg/kg |  | NC |
| SO | BVBS1293 | BVBS1293S006 | N | 10 Apr 2015 | 7 - 8 | SW8270C-SIM | PAH | Naphthalene | 12 U | 5.8 | 12 | 3.6 | µg/kg | X | RL |
| SO | BVBS1293 | BVBS1293S006 | N | 10 Apr 2015 | 7 - 8 | SW8270C-SIM | PAH | PAHTEQM | 0 U |  |  | 4.47 | µg/kg |  | N |
| SO | BVBS1293 | BVBS1293S006 | N | 10 Apr 2015 | 7 - 8 | SW8270C-SIM | PAH | Phenanthrene | 12 U | 5.8 | 12 | 3.9 | µg/kg | X | RL |
| SO | BVBS1293 | BVBS1293S006 | N | 10 Apr 2015 | 7 - 8 | SW8270C-SIM | PAH | Pyrene | 12 U | 5.8 | 12 | 5.6 | µg/kg | X | RL |
| SO | BVBS1293 | BVBS1293S006 | N | 10 Apr 2015 | 7 - 8 | SW8270C-SIM | PHTH | Bis(2-ethylhexyl)phthalate | 23 U | 12 | 23 | 61 | µg/kg |  | N |
| SO | BVBS1293 | BVBS1293S006 | N | 10 Apr 2015 | 7 - 8 | SW8270C-SIM | PHTH | Butyl benzyl phthalate | 23 U | 12 | 23 | 100 | µg/kg |  | N |
| SO | BVBS1293 | BVBS1293S006 | N | 10 Apr 2015 | 7 - 8 | SW8270C-SIM | PHTH | Diethyl phthalate | 23 U | 12 | 23 | 27 | µg/kg |  | N |
| SO | BVBS1293 | BVBS1293S006 | N | 10 Apr 2015 | 7 - 8 | SW8270C-SIM | PHTH | Dimethyl phthalate | 23 U | 12 | 23 | 27 | µg/kg |  | N |
| SO | BVBS1293 | BVBS1293S006 | N | 10 Apr 2015 | 7 - 8 | SW8270C-SIM | PHTH | Di-n-butyl phthalate | 23 U | 12 | 23 | 27 | µg/kg |  | N |
| SO | BVBS1293 | BVBS1293S006 | N | 10 Apr 2015 | 7 - 8 | SW8270C-SIM | PHTH | Di-n-octyl phthalate | 23 U | 12 | 23 | 27 | µg/kg |  | N |
| SO | BVBS1293 | BVBS1293S006 | N | 10 Apr 2015 | 7 - 8 | SW8260B | SVOC | Diisopropyl ether | 0.97 U | 0.97 | 9.7 | 10 | µg/kg |  | N |
| SO | BVBS1293 | BVBS1293S006 | N | 10 Apr 2015 | 7 - 8 | SW8270C-SIM | SVOC | n-Nitrosodimethylamine | 23 U | 12 | 23 | 10 | µg/kg | X | RL |
| SO | BVBS1293 | BVBS1293S006 | N | 10 Apr 2015 | 7 - 8 | SW8260B | SVOC | tert-Amyl methyl ether | 0.97 U | 0.97 | 4.8 | 5 | µg/kg |  | N |
| SO | BVBS1293 | BVBS1293S006 | N | 10 Apr 2015 | 7 - 8 | SW8260B | SVOC | tert-Butyl ethyl ether | 0.97 U | 0.97 | 4.8 | 5 | µg/kg |  | N |
| SO | BVBS1293 | BVBS1293S006 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | 1,1,1,2-Tetrachloroethane | 0.97 U | 0.97 | 4.8 | 5 | µg/kg |  | N |
| SO | BVBS1293 | BVBS1293S006 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | 1,1,1-Trichloroethane | 0.97 U | 0.97 | 4.8 | 5 | µg/kg |  | N |
| SO | BVBS1293 | BVBS1293S006 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | 1,1,2,2-Tetrachloroethane | 0.97 U | 0.97 | 4.8 | 5 | µg/kg |  | N |
| SO | BVBS1293 | BVBS1293S006 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | 1,1,2-Trichloro-1,2,2-trifluoroethane | 1.9 U | 1.9 | 4.8 | 5 | µg/kg |  | N |
| SO | BVBS1293 | BVBS1293S006 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | 1,1,2-Trichloroethane | 0.97 U | 0.97 | 4.8 | 5 | µg/kg |  | N |
| SO | BVBS1293 | BVBS1293S006 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | 1,1-Dichloroethane | 0.97 U | 0.97 | 4.8 | 5 | µg/kg |  | N |
| SO | BVBS1293 | BVBS1293S006 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | 1,1-Dichloroethene | 0.97 U | 0.97 | 4.8 | 5 | µg/kg |  | N |

APPENDIX E-2

**Analytical Data 2015 Biovent Sampling**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | SL | Units | Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1293 | BVBS1293S006 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | 1,1-Dichloropropene | 0.97 U | 0.97 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S006 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | 1,2,3-Trichlorobenzene | 1.9 U | 1.9 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S006 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | 1,2,3-Trichloropropane | 1.9 U | 1.9 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S006 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | 1,2,4-Trichlorobenzene | 1.9 U | 1.9 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S006 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | 1,2,4-Trimethylbenzene | 0.97 U | 0.97 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S006 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | 1,2-Dibromo-3-chloropropane | 1.9 U | 1.9 | 9.7 | 10 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S006 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | 1,2-Dibromoethane (EDB) | 0.97 U | 0.97 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S006 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | 1,2-Dichlorobenzene | 0.97 U | 0.97 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S006 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | 1,2-Dichloroethane | 0.97 U | 0.97 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S006 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | 1,2-Dichloropropane | 0.97 U | 0.97 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S006 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | 1,3,5-Trimethylbenzene | 0.97 U | 0.97 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S006 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | 1,3-Dichlorobenzene | 0.97 U | 0.97 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S006 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | 1,3-Dichloropropane | 0.97 U | 0.97 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S006 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | 1,4-Dichlorobenzene | 0.97 U | 0.97 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S006 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | 2,2-Dichloropropane | 1.9 U | 1.9 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S006 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | 2-Butanone (MEK) | 4.8 U | 4.8 | 19 | 20 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S006 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | 2-Chloro-1,1,1-trifluoroethane | 1.9 U | 1.9 | 9.7 | 10 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S006 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | 2-Chloroethyl vinyl ether | 1.9 U | 1.9 | 9.7 | 10 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S006 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | 2-Chlorotoluene | 0.97 U | 0.97 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S006 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | 2-Hexanone | 4.8 U | 4.8 | 9.7 | 10 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S006 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | 4-Chlorotoluene | 0.97 U | 0.97 | 9.7 | 10 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S006 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | 4-Methyl-2-pentanone (MIBK) | 4.8 U | 4.8 | 9.7 | 10 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S006 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | Acetone | 10 J | 4.8 | 19 | 20 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S006 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | Benzene | 0.97 U | 0.97 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S006 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | Bromobenzene | 0.97 U | 0.97 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S006 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | Bromochloromethane | 0.97 U | 0.97 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S006 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | Bromodichloromethane | 0.97 U | 0.97 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S006 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | Bromoform | 1.9 U | 1.9 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S006 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | Bromomethane | 1.9 U | 1.9 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S006 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | Carbon tetrachloride | 0.97 U | 0.97 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S006 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | Chlorobenzene | 0.97 U | 0.97 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S006 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | Chloroethane | 1.9 U | 1.9 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S006 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | Chloromethane | 1.9 U | 1.9 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S006 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | Chlorotrifluoroethylene | 1.9 U | 1.9 | 9.7 | 10 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S006 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | cis-1,2-Dichloroethene | 0.97 U | 0.97 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S006 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | cis-1,3-Dichloropropene | 0.97 U | 0.97 | 4.8 | 5 | µg/kg | | N |

APPENDIX E-2

**Analytical Data 2015 Biovent Sampling**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | SL | Units | Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1293 | BVBS1293S006 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | Dibromochloromethane | 0.97 U | 0.97 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S006 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | Dibromomethane | 0.97 U | 0.97 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S006 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | Dichlorodifluoromethane | 1.9 U | 1.9 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S006 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | Ethylbenzene | 0.97 U | 0.97 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S006 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | Hexachlorobutadiene | 1.9 U | 1.9 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S006 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | Isopropylbenzene | 0.97 U | 0.97 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S006 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | m,p-Xylenes | 1.9 U | 1.9 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S006 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | Methylene chloride | 1.9 U | 1.9 | 9.7 | 10 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S006 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | Methyl-tert-butyl Ether (MTBE) | 0.97 U | 0.97 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S006 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | n-butylbenzene | 0.97 U | 0.97 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S006 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | n-Propylbenzene | 0.97 U | 0.97 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S006 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | o-Xylene | 0.97 U | 0.97 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S006 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | p-Isopropyltoluene | 0.97 U | 0.97 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S006 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | sec-Butylbenzene | 0.97 U | 0.97 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S006 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | Styrene | 0.97 U | 0.97 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S006 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | tert-Butanol (TBA) | 9.7 U | 9.7 | 48 | | µg/kg | | NC |
| SO | BVBS1293 | BVBS1293S006 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | tert-Butylbenzene | 0.97 U | 0.97 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S006 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | Tetrachloroethene | 0.97 U | 0.97 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S006 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | Toluene | 0.97 U | 0.97 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S006 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | trans-1,2-Dichloroethene | 0.97 U | 0.97 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S006 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | trans-1,3-Dichloropropene | 0.97 U | 0.97 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S006 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | Trichloroethene | 0.97 U | 0.97 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S006 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | Trichlorofluoromethane | 1.9 U | 1.9 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S006 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | Trichloromethane (Chloroform) | 0.97 U | 0.97 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1293 | BVBS1293S006 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | Vinyl chloride | 1.9 U | 1.9 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S001 | N | 4 Feb 2015 | 2 - 4 | Walkley-Black | GENCHEM | Total Organic Carbon | 3300 = | 681 | 681 | | mg/kg | | NC |
| SO | BVBS1294 | BVBS1294S001 | N | 4 Feb 2015 | 2 - 4 | SW8015B | HC | Diesel Range Organics (C12-C14) | 5800 U | 2900 | 5800 | 5000 | µg/kg | X | N |
| SO | BVBS1294 | BVBS1294S001 | N | 4 Feb 2015 | 2 - 4 | SW8015B | HC | Diesel Range Organics (C15-C20) | 5800 U | 2900 | 5800 | 5000 | µg/kg | X | N |
| SO | BVBS1294 | BVBS1294S001 | N | 4 Feb 2015 | 2 - 4 | SW8015B | HC | Diesel Range Organics (C21-C30) | 8000 = | 2900 | 5800 | 5000 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S001 | N | 4 Feb 2015 | 2 - 4 | SW8015B | HC | Diesel Range Organics (C8-C11) | 5800 U | 2900 | 5800 | 1000 | µg/kg | X | RL |
| SO | BVBS1294 | BVBS1294S001 | N | 4 Feb 2015 | 2 - 4 | SW8015B | HC | GRO (C4-C12) | 9400 = | 480 | 970 | 1000 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S001 | N | 4 Feb 2015 | 2 - 4 | SW8015B | HC | ORO (C31-C40) | 12000 U | 5800 | 12000 | 10000 | µg/kg | X | N |
| SO | BVBS1294 | BVBS1294S001 | N | 4 Feb 2015 | 2 - 4 | SW8015B | HC | TOTAL EFH(C8-C40) | 15000 = | 2900 | 5800 | 10000 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S001 | N | 4 Feb 2015 | 2 - 4 | SW8270C-SIM | PAH | 1-Methylnaphthalene | 12 U | 5.8 | 12 | 2.5 | µg/kg | X | RL |
| SO | BVBS1294 | BVBS1294S001 | N | 4 Feb 2015 | 2 - 4 | SW8270C-SIM | PAH | 2-Methylnaphthalene | 12 U | 5.8 | 12 | 2.5 | µg/kg | X | RL |
| SO | BVBS1294 | BVBS1294S001 | N | 4 Feb 2015 | 2 - 4 | SW8270C-SIM | PAH | Acenaphthene | 12 U | 5.8 | 12 | 2.5 | µg/kg | X | RL |

APPENDIX E-2

**Analytical Data 2015 Biovent Sampling**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | SL | Units | Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1294 | BVBS1294S001 | N | 4 Feb 2015 | 2 - 4 | SW8270C-SIM | PAH | Acenaphthylene | 12 U | 5.8 | 12 | 2.5 | µg/kg | X | RL |
| SO | BVBS1294 | BVBS1294S001 | N | 4 Feb 2015 | 2 - 4 | SW8270C-SIM | PAH | Anthracene | 12 U | 5.8 | 12 | 2.5 | µg/kg | X | RL |
| SO | BVBS1294 | BVBS1294S001 | N | 4 Feb 2015 | 2 - 4 | SW8270C-SIM | PAH | Benzo(a)anthracene | 12 U | 5.8 | 12 | | µg/kg | | NC |
| SO | BVBS1294 | BVBS1294S001 | N | 4 Feb 2015 | 2 - 4 | SW8270C-SIM | PAH | Benzo(a)pyrene | 12 U | 5.8 | 12 | | µg/kg | | NC |
| SO | BVBS1294 | BVBS1294S001 | N | 4 Feb 2015 | 2 - 4 | SW8270C-SIM | PAH | Benzo(b)fluoranthene | 12 U | 5.8 | 12 | | µg/kg | | NC |
| SO | BVBS1294 | BVBS1294S001 | N | 4 Feb 2015 | 2 - 4 | SW8270C-SIM | PAH | Benzo(ghi)perylene | 8.2 J | 5.8 | 12 | 2.5 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S001 | N | 4 Feb 2015 | 2 - 4 | SW8270C-SIM | PAH | Benzo(k)fluoranthene | 12 U | 5.8 | 12 | | µg/kg | | NC |
| SO | BVBS1294 | BVBS1294S001 | N | 4 Feb 2015 | 2 - 4 | SW8270C-SIM | PAH | Chrysene | 12 U | 5.8 | 12 | | µg/kg | | NC |
| SO | BVBS1294 | BVBS1294S001 | N | 4 Feb 2015 | 2 - 4 | SW8270C-SIM | PAH | Dibenzo(a,h)anthracene | 12 U | 5.8 | 12 | | µg/kg | | NC |
| SO | BVBS1294 | BVBS1294S001 | N | 4 Feb 2015 | 2 - 4 | SW8270C-SIM | PAH | Fluoranthene | 12 U | 5.8 | 12 | 5.2 | µg/kg | X | RL |
| SO | BVBS1294 | BVBS1294S001 | N | 4 Feb 2015 | 2 - 4 | SW8270C-SIM | PAH | Fluorene | 12 U | 5.8 | 12 | 3.8 | µg/kg | X | RL |
| SO | BVBS1294 | BVBS1294S001 | N | 4 Feb 2015 | 2 - 4 | SW8270C-SIM | PAH | Indeno(1,2,3-cd)pyrene | 12 U | 5.8 | 12 | | µg/kg | | NC |
| SO | BVBS1294 | BVBS1294S001 | N | 4 Feb 2015 | 2 - 4 | SW8270C-SIM | PAH | Naphthalene | 12 U | 5.8 | 12 | 3.6 | µg/kg | X | RL |
| SO | BVBS1294 | BVBS1294S001 | N | 4 Feb 2015 | 2 - 4 | SW8270C-SIM | PAH | PAHTEQM | 0 U | | | 4.47 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S001 | N | 4 Feb 2015 | 2 - 4 | SW8270C-SIM | PAH | Phenanthrene | 12 U | 5.8 | 12 | 3.9 | µg/kg | X | RL |
| SO | BVBS1294 | BVBS1294S001 | N | 4 Feb 2015 | 2 - 4 | SW8270C-SIM | PAH | Pyrene | 12 U | 5.8 | 12 | 5.6 | µg/kg | X | RL |
| SO | BVBS1294 | BVBS1294S001 | N | 4 Feb 2015 | 2 - 4 | SW8270C-SIM | PHTH | Bis(2-ethylhexyl)phthalate | 23 U | 12 | 23 | 61 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S001 | N | 4 Feb 2015 | 2 - 4 | SW8270C-SIM | PHTH | Butyl benzyl phthalate | 23 U | 12 | 23 | 100 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S001 | N | 4 Feb 2015 | 2 - 4 | SW8270C-SIM | PHTH | Diethyl phthalate | 23 U | 12 | 23 | 27 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S001 | N | 4 Feb 2015 | 2 - 4 | SW8270C-SIM | PHTH | Dimethyl phthalate | 23 U | 12 | 23 | 27 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S001 | N | 4 Feb 2015 | 2 - 4 | SW8270C-SIM | PHTH | Di-n-butyl phthalate | 23 U | 12 | 23 | 27 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S001 | N | 4 Feb 2015 | 2 - 4 | SW8270C-SIM | PHTH | Di-n-octyl phthalate | 23 U | 12 | 23 | 27 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S001 | N | 4 Feb 2015 | 2 - 4 | SW8260B | SVOC | Diisopropyl ether | 1 U | 1 | 10 | 10 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S001 | N | 4 Feb 2015 | 2 - 4 | SW8270C-SIM | SVOC | n-Nitrosodimethylamine | 23 U | 12 | 23 | 10 | µg/kg | X | RL |
| SO | BVBS1294 | BVBS1294S001 | N | 4 Feb 2015 | 2 - 4 | SW8260B | SVOC | tert-Amyl methyl ether | 1 U | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S001 | N | 4 Feb 2015 | 2 - 4 | SW8260B | SVOC | tert-Butyl ethyl ether | 1 U | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S001 | N | 4 Feb 2015 | 2 - 4 | SW8260B | VOC | 1,1,1,2-Tetrachloroethane | 1 U | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S001 | N | 4 Feb 2015 | 2 - 4 | SW8260B | VOC | 1,1,1-Trichloroethane | 1 U | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S001 | N | 4 Feb 2015 | 2 - 4 | SW8260B | VOC | 1,1,2,2-Tetrachloroethane | 1 U | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S001 | N | 4 Feb 2015 | 2 - 4 | SW8260B | VOC | 1,1,2-Trichloro-1,2,2-trifluoroethane | 2.1 U | 2.1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S001 | N | 4 Feb 2015 | 2 - 4 | SW8260B | VOC | 1,1,2-Trichloroethane | 1 U | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S001 | N | 4 Feb 2015 | 2 - 4 | SW8260B | VOC | 1,1-Dichloroethane | 1 U | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S001 | N | 4 Feb 2015 | 2 - 4 | SW8260B | VOC | 1,1-Dichloroethene | 1 U | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S001 | N | 4 Feb 2015 | 2 - 4 | SW8260B | VOC | 1,1-Dichloropropene | 1 U | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S001 | N | 4 Feb 2015 | 2 - 4 | SW8260B | VOC | 1,2,3-Trichlorobenzene | 2.1 U | 2.1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S001 | N | 4 Feb 2015 | 2 - 4 | SW8260B | VOC | 1,2,3-Trichloropropane | 2.1 U | 2.1 | 5.2 | 5 | µg/kg | | N |

APPENDIX E-2

**Analytical Data 2015 Biovent Sampling**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | SL | Units | Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1294 | BVBS1294S001 | N | 4 Feb 2015 | 2 - 4 | SW8260B | VOC | 1,2,4-Trichlorobenzene | 2.1 U | 2.1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S001 | N | 4 Feb 2015 | 2 - 4 | SW8260B | VOC | 1,2,4-Trimethylbenzene | 1 U | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S001 | N | 4 Feb 2015 | 2 - 4 | SW8260B | VOC | 1,2-Dibromo-3-chloropropane | 2.1 U | 2.1 | 10 | 10 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S001 | N | 4 Feb 2015 | 2 - 4 | SW8260B | VOC | 1,2-Dibromoethane (EDB) | 1 U | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S001 | N | 4 Feb 2015 | 2 - 4 | SW8260B | VOC | 1,2-Dichlorobenzene | 1 U | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S001 | N | 4 Feb 2015 | 2 - 4 | SW8260B | VOC | 1,2-Dichloroethane | 1 U | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S001 | N | 4 Feb 2015 | 2 - 4 | SW8260B | VOC | 1,2-Dichloropropane | 1 U | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S001 | N | 4 Feb 2015 | 2 - 4 | SW8260B | VOC | 1,3,5-Trimethylbenzene | 1 U | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S001 | N | 4 Feb 2015 | 2 - 4 | SW8260B | VOC | 1,3-Dichlorobenzene | 1 U | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S001 | N | 4 Feb 2015 | 2 - 4 | SW8260B | VOC | 1,3-Dichloropropane | 1 U | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S001 | N | 4 Feb 2015 | 2 - 4 | SW8260B | VOC | 1,4-Dichlorobenzene | 1 U | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S001 | N | 4 Feb 2015 | 2 - 4 | SW8260B | VOC | 2,2-Dichloropropane | 2.1 U | 2.1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S001 | N | 4 Feb 2015 | 2 - 4 | SW8260B | VOC | 2-Butanone (MEK) | 5.2 U | 5.2 | 21 | 20 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S001 | N | 4 Feb 2015 | 2 - 4 | SW8260B | VOC | 2-Chloro-1,1,1-trifluoroethane | 2.1 U | 2.1 | 10 | 10 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S001 | N | 4 Feb 2015 | 2 - 4 | SW8260B | VOC | 2-Chloroethyl vinyl ether | 2.1 U | 2.1 | 10 | 10 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S001 | N | 4 Feb 2015 | 2 - 4 | SW8260B | VOC | 2-Chlorotoluene | 1 U | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S001 | N | 4 Feb 2015 | 2 - 4 | SW8260B | VOC | 2-Hexanone | 5.2 U | 5.2 | 10 | 10 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S001 | N | 4 Feb 2015 | 2 - 4 | SW8260B | VOC | 4-Chlorotoluene | 1 U | 1 | 10 | 10 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S001 | N | 4 Feb 2015 | 2 - 4 | SW8260B | VOC | 4-Methyl-2-pentanone (MIBK) | 5.2 U | 5.2 | 10 | 10 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S001 | N | 4 Feb 2015 | 2 - 4 | SW8260B | VOC | Acetone | 5.2 U | 5.2 | 21 | 20 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S001 | N | 4 Feb 2015 | 2 - 4 | SW8260B | VOC | Benzene | 1 U | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S001 | N | 4 Feb 2015 | 2 - 4 | SW8260B | VOC | Bromobenzene | 1 U | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S001 | N | 4 Feb 2015 | 2 - 4 | SW8260B | VOC | Bromochloromethane | 1 U | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S001 | N | 4 Feb 2015 | 2 - 4 | SW8260B | VOC | Bromodichloromethane | 1 U | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S001 | N | 4 Feb 2015 | 2 - 4 | SW8260B | VOC | Bromoform | 2.1 U | 2.1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S001 | N | 4 Feb 2015 | 2 - 4 | SW8260B | VOC | Bromomethane | 2.1 U | 2.1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S001 | N | 4 Feb 2015 | 2 - 4 | SW8260B | VOC | Carbon tetrachloride | 1 U | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S001 | N | 4 Feb 2015 | 2 - 4 | SW8260B | VOC | Chlorobenzene | 1 U | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S001 | N | 4 Feb 2015 | 2 - 4 | SW8260B | VOC | Chloroethane | 2.1 U | 2.1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S001 | N | 4 Feb 2015 | 2 - 4 | SW8260B | VOC | Chloromethane | 2.1 U | 2.1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S001 | N | 4 Feb 2015 | 2 - 4 | SW8260B | VOC | Chlorotrifluoroethylene | 2.1 U | 2.1 | 10 | 10 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S001 | N | 4 Feb 2015 | 2 - 4 | SW8260B | VOC | cis-1,2-Dichloroethene | 1 U | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S001 | N | 4 Feb 2015 | 2 - 4 | SW8260B | VOC | cis-1,3-Dichloropropene | 1 U | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S001 | N | 4 Feb 2015 | 2 - 4 | SW8260B | VOC | Dibromochloromethane | 1 U | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S001 | N | 4 Feb 2015 | 2 - 4 | SW8260B | VOC | Dibromomethane | 1 U | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S001 | N | 4 Feb 2015 | 2 - 4 | SW8260B | VOC | Dichlorodifluoromethane | 2.1 U | 2.1 | 5.2 | 5 | µg/kg | | N |

APPENDIX E-2

**Analytical Data 2015 Biovent Sampling**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | SL | Units | Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1294 | BVBS1294S001 | N | 4 Feb 2015 | 2 - 4 | SW8260B | VOC | Ethylbenzene | 1 U | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S001 | N | 4 Feb 2015 | 2 - 4 | SW8260B | VOC | Hexachlorobutadiene | 2.1 U | 2.1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S001 | N | 4 Feb 2015 | 2 - 4 | SW8260B | VOC | Isopropylbenzene | 1 U | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S001 | N | 4 Feb 2015 | 2 - 4 | SW8260B | VOC | m,p-Xylenes | 2.1 U | 2.1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S001 | N | 4 Feb 2015 | 2 - 4 | SW8260B | VOC | Methylene chloride | 2.1 U | 2.1 | 10 | 10 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S001 | N | 4 Feb 2015 | 2 - 4 | SW8260B | VOC | Methyl-tert-butyl Ether (MTBE) | 1 U | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S001 | N | 4 Feb 2015 | 2 - 4 | SW8260B | VOC | n-butylbenzene | 1 U | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S001 | N | 4 Feb 2015 | 2 - 4 | SW8260B | VOC | n-Propylbenzene | 1 U | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S001 | N | 4 Feb 2015 | 2 - 4 | SW8260B | VOC | o-Xylene | 1 U | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S001 | N | 4 Feb 2015 | 2 - 4 | SW8260B | VOC | p-Isopropyltoluene | 1 U | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S001 | N | 4 Feb 2015 | 2 - 4 | SW8260B | VOC | sec-Butylbenzene | 1 U | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S001 | N | 4 Feb 2015 | 2 - 4 | SW8260B | VOC | Styrene | 1 U | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S001 | N | 4 Feb 2015 | 2 - 4 | SW8260B | VOC | tert-Butanol (TBA) | 10 U | 10 | 52 | | µg/kg | | NC |
| SO | BVBS1294 | BVBS1294S001 | N | 4 Feb 2015 | 2 - 4 | SW8260B | VOC | tert-Butylbenzene | 1 U | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S001 | N | 4 Feb 2015 | 2 - 4 | SW8260B | VOC | Tetrachloroethene | 1 U | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S001 | N | 4 Feb 2015 | 2 - 4 | SW8260B | VOC | Toluene | 1 U | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S001 | N | 4 Feb 2015 | 2 - 4 | SW8260B | VOC | trans-1,2-Dichloroethene | 1 U | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S001 | N | 4 Feb 2015 | 2 - 4 | SW8260B | VOC | trans-1,3-Dichloropropene | 1 U | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S001 | N | 4 Feb 2015 | 2 - 4 | SW8260B | VOC | Trichloroethene | 1 U | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S001 | N | 4 Feb 2015 | 2 - 4 | SW8260B | VOC | Trichlorofluoromethane | 2.1 U | 2.1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S001 | N | 4 Feb 2015 | 2 - 4 | SW8260B | VOC | Trichloromethane (Chloroform) | 1 U | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S001 | N | 4 Feb 2015 | 2 - 4 | SW8260B | VOC | Vinyl chloride | 2.1 U | 2.1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S002 | N | 4 Feb 2015 | 6 - 7 | Walkley-Black | GENCHEM | Total Organic Carbon | 13800 = | 1420 | 1420 | | mg/kg | | NC |
| SO | BVBS1294 | BVBS1294S002 | N | 4 Feb 2015 | 6 - 7 | SW8015B | HC | Diesel Range Organics (C12-C14) | 4500000 = | 30000 | 61000 | 5000 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S002 | N | 4 Feb 2015 | 6 - 7 | SW8015B | HC | Diesel Range Organics (C15-C20) | 3000000 = | 30000 | 61000 | 5000 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S002 | N | 4 Feb 2015 | 6 - 7 | SW8015B | HC | Diesel Range Organics (C21-C30) | 68000 = | 30000 | 61000 | 5000 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S002 | N | 4 Feb 2015 | 6 - 7 | SW8015B | HC | Diesel Range Organics (C8-C11) | 1500000 = | 30000 | 61000 | 1000 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S002 | N | 4 Feb 2015 | 6 - 7 | SW8015B | HC | GRO (C4-C12) | 2000000 = | 19000 | 39000 | 1000 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S002 | N | 4 Feb 2015 | 6 - 7 | SW8015B | HC | ORO (C31-C40) | 120000 U | 61000 | 1E+05 | 10000 | µg/kg | X | RL |
| SO | BVBS1294 | BVBS1294S002 | N | 4 Feb 2015 | 6 - 7 | SW8015B | HC | TOTAL EFH(C8-C40) | 9000000 = | 30000 | 61000 | 10000 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S002 | N | 4 Feb 2015 | 6 - 7 | SW8270C-SIM | PAH | 1-Methylnaphthalene | 12 U | 6.1 | 12 | 2.5 | µg/kg | X | RL |
| SO | BVBS1294 | BVBS1294S002 | N | 4 Feb 2015 | 6 - 7 | SW8270C-SIM | PAH | 2-Methylnaphthalene | 12 U | 6.1 | 12 | 2.5 | µg/kg | X | RL |
| SO | BVBS1294 | BVBS1294S002 | N | 4 Feb 2015 | 6 - 7 | SW8270C-SIM | PAH | Acenaphthene | 12 U | 6.1 | 12 | 2.5 | µg/kg | X | RL |
| SO | BVBS1294 | BVBS1294S002 | N | 4 Feb 2015 | 6 - 7 | SW8270C-SIM | PAH | Acenaphthylene | 12 U | 6.1 | 12 | 2.5 | µg/kg | X | RL |
| SO | BVBS1294 | BVBS1294S002 | N | 4 Feb 2015 | 6 - 7 | SW8270C-SIM | PAH | Anthracene | 84 J | 6.1 | 12 | 2.5 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S002 | N | 4 Feb 2015 | 6 - 7 | SW8270C-SIM | PAH | Benzo(a)anthracene | 12 U | 6.1 | 12 | | µg/kg | | NC |

APPENDIX E-2

**Analytical Data 2015 Biovent Sampling**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | SL | Units | Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1294 | BVBS1294S002 | N | 4 Feb 2015 | 6 - 7 | SW8270C-SIM | PAH | Benzo(a)pyrene | 79 J | 6.1 | 12 | | µg/kg | | NC |
| SO | BVBS1294 | BVBS1294S002 | N | 4 Feb 2015 | 6 - 7 | SW8270C-SIM | PAH | Benzo(b)fluoranthene | 92 J | 6.1 | 12 | | µg/kg | | NC |
| SO | BVBS1294 | BVBS1294S002 | N | 4 Feb 2015 | 6 - 7 | SW8270C-SIM | PAH | Benzo(ghi)perylene | 120 J | 6.1 | 12 | 2.5 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S002 | N | 4 Feb 2015 | 6 - 7 | SW8270C-SIM | PAH | Benzo(k)fluoranthene | 16 J | 6.1 | 12 | | µg/kg | | NC |
| SO | BVBS1294 | BVBS1294S002 | N | 4 Feb 2015 | 6 - 7 | SW8270C-SIM | PAH | Chrysene | 48 J | 6.1 | 12 | | µg/kg | | NC |
| SO | BVBS1294 | BVBS1294S002 | N | 4 Feb 2015 | 6 - 7 | SW8270C-SIM | PAH | Dibenzo(a,h)anthracene | 12 U | 6.1 | 12 | | µg/kg | | NC |
| SO | BVBS1294 | BVBS1294S002 | N | 4 Feb 2015 | 6 - 7 | SW8270C-SIM | PAH | Fluoranthene | 350 J | 6.1 | 12 | 5.2 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S002 | N | 4 Feb 2015 | 6 - 7 | SW8270C-SIM | PAH | Fluorene | 12 U | 6.1 | 12 | 3.8 | µg/kg | X | RL |
| SO | BVBS1294 | BVBS1294S002 | N | 4 Feb 2015 | 6 - 7 | SW8270C-SIM | PAH | Indeno(1,2,3-cd)pyrene | 66 J | 6.1 | 12 | | µg/kg | | NC |
| SO | BVBS1294 | BVBS1294S002 | N | 4 Feb 2015 | 6 - 7 | SW8270C-SIM | PAH | Naphthalene | 12 U | 6.1 | 12 | 3.6 | µg/kg | X | RL |
| SO | BVBS1294 | BVBS1294S002 | N | 4 Feb 2015 | 6 - 7 | SW8270C-SIM | PAH | PAHTEQM | 96.88 = | | | 4.47 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S002 | N | 4 Feb 2015 | 6 - 7 | SW8270C-SIM | PAH | Phenanthrene | 360 J | 6.1 | 12 | 3.9 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S002 | N | 4 Feb 2015 | 6 - 7 | SW8270C-SIM | PAH | Pyrene | 450 J | 6.1 | 12 | 5.6 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S002 | N | 4 Feb 2015 | 6 - 7 | SW8270C-SIM | PHTH | Bis(2-ethylhexyl)phthalate | 1800 J | 12 | 24 | 61 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S002 | N | 4 Feb 2015 | 6 - 7 | SW8270C-SIM | PHTH | Butyl benzyl phthalate | 24 U | 12 | 24 | 100 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S002 | N | 4 Feb 2015 | 6 - 7 | SW8270C-SIM | PHTH | Diethyl phthalate | 24 U | 12 | 24 | 27 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S002 | N | 4 Feb 2015 | 6 - 7 | SW8270C-SIM | PHTH | Dimethyl phthalate | 24 U | 12 | 24 | 27 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S002 | N | 4 Feb 2015 | 6 - 7 | SW8270C-SIM | PHTH | Di-n-butyl phthalate | 24 U | 12 | 24 | 27 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S002 | N | 4 Feb 2015 | 6 - 7 | SW8270C-SIM | PHTH | Di-n-octyl phthalate | 24 U | 12 | 24 | 27 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S002 | N | 4 Feb 2015 | 6 - 7 | SW8260B | SVOC | Diisopropyl ether | 0.99 UJ | 0.99 | 9.9 | 10 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S002 | N | 4 Feb 2015 | 6 - 7 | SW8270C-SIM | SVOC | n-Nitrosodimethylamine | 24 U | 12 | 24 | 10 | µg/kg | X | RL |
| SO | BVBS1294 | BVBS1294S002 | N | 4 Feb 2015 | 6 - 7 | SW8260B | SVOC | tert-Amyl methyl ether | 0.99 UJ | 0.99 | 5 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S002 | N | 4 Feb 2015 | 6 - 7 | SW8260B | SVOC | tert-Butyl ethyl ether | 0.99 UJ | 0.99 | 5 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S002 | N | 4 Feb 2015 | 6 - 7 | SW8260B | VOC | 1,1,1,2-Tetrachloroethane | 0.99 UJ | 0.99 | 5 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S002 | N | 4 Feb 2015 | 6 - 7 | SW8260B | VOC | 1,1,1-Trichloroethane | 0.99 UJ | 0.99 | 5 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S002 | N | 4 Feb 2015 | 6 - 7 | SW8260B | VOC | 1,1,2,2-Tetrachloroethane | 0.99 UJ | 0.99 | 5 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S002 | N | 4 Feb 2015 | 6 - 7 | SW8260B | VOC | 1,1,2-Trichloro-1,2,2-trifluoroethane | 2 UJ | 2 | 5 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S002 | N | 4 Feb 2015 | 6 - 7 | SW8260B | VOC | 1,1,2-Trichloroethane | 0.99 UJ | 0.99 | 5 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S002 | N | 4 Feb 2015 | 6 - 7 | SW8260B | VOC | 1,1-Dichloroethane | 0.99 UJ | 0.99 | 5 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S002 | N | 4 Feb 2015 | 6 - 7 | SW8260B | VOC | 1,1-Dichloroethene | 0.99 UJ | 0.99 | 5 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S002 | N | 4 Feb 2015 | 6 - 7 | SW8260B | VOC | 1,1-Dichloropropene | 0.99 UJ | 0.99 | 5 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S002 | N | 4 Feb 2015 | 6 - 7 | SW8260B | VOC | 1,2,3-Trichlorobenzene | 2 UJ | 2 | 5 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S002 | N | 4 Feb 2015 | 6 - 7 | SW8260B | VOC | 1,2,3-Trichloropropane | 2 UJ | 2 | 5 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S002 | N | 4 Feb 2015 | 6 - 7 | SW8260B | VOC | 1,2,4-Trichlorobenzene | 2 UJ | 2 | 5 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S002 | N | 4 Feb 2015 | 6 - 7 | SW8260B | VOC | 1,2,4-Trimethylbenzene | 5.7 J | 0.99 | 5 | 5 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S002 | N | 4 Feb 2015 | 6 - 7 | SW8260B | VOC | 1,2-Dibromo-3-chloropropane | 2 UJ | 2 | 9.9 | 10 | µg/kg | | N |

APPENDIX E-2

**Analytical Data 2015 Biovent Sampling**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | SL | Units | Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1294 | BVBS1294S002 | N | 4 Feb 2015 | 6 - 7 | SW8260B | VOC | 1,2-Dibromoethane (EDB) | 0.99 UJ | 0.99 | 5 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S002 | N | 4 Feb 2015 | 6 - 7 | SW8260B | VOC | 1,2-Dichlorobenzene | 0.99 UJ | 0.99 | 5 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S002 | N | 4 Feb 2015 | 6 - 7 | SW8260B | VOC | 1,2-Dichloroethane | 0.99 UJ | 0.99 | 5 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S002 | N | 4 Feb 2015 | 6 - 7 | SW8260B | VOC | 1,2-Dichloropropane | 0.99 UJ | 0.99 | 5 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S002 | N | 4 Feb 2015 | 6 - 7 | SW8260B | VOC | 1,3,5-Trimethylbenzene | 2.1 J | 0.99 | 5 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S002 | N | 4 Feb 2015 | 6 - 7 | SW8260B | VOC | 1,3-Dichlorobenzene | 0.99 UJ | 0.99 | 5 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S002 | N | 4 Feb 2015 | 6 - 7 | SW8260B | VOC | 1,3-Dichloropropane | 0.99 UJ | 0.99 | 5 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S002 | N | 4 Feb 2015 | 6 - 7 | SW8260B | VOC | 1,4-Dichlorobenzene | 0.99 UJ | 0.99 | 5 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S002 | N | 4 Feb 2015 | 6 - 7 | SW8260B | VOC | 2,2-Dichloropropane | 2 UJ | 2 | 5 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S002 | N | 4 Feb 2015 | 6 - 7 | SW8260B | VOC | 2-Butanone (MEK) | 5 UJ | 5 | 20 | 20 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S002 | N | 4 Feb 2015 | 6 - 7 | SW8260B | VOC | 2-Chloro-1,1,1-trifluoroethane | 2 UJ | 2 | 9.9 | 10 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S002 | N | 4 Feb 2015 | 6 - 7 | SW8260B | VOC | 2-Chloroethyl vinyl ether | 2 UJ | 2 | 9.9 | 10 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S002 | N | 4 Feb 2015 | 6 - 7 | SW8260B | VOC | 2-Chlorotoluene | 0.99 UJ | 0.99 | 5 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S002 | N | 4 Feb 2015 | 6 - 7 | SW8260B | VOC | 2-Hexanone | 5 UJ | 5 | 9.9 | 10 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S002 | N | 4 Feb 2015 | 6 - 7 | SW8260B | VOC | 4-Chlorotoluene | 0.99 UJ | 0.99 | 9.9 | 10 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S002 | N | 4 Feb 2015 | 6 - 7 | SW8260B | VOC | 4-Methyl-2-pentanone (MIBK) | 5 UJ | 5 | 9.9 | 10 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S002 | N | 4 Feb 2015 | 6 - 7 | SW8260B | VOC | Acetone | 23 J | 5 | 20 | 20 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S002 | N | 4 Feb 2015 | 6 - 7 | SW8260B | VOC | Benzene | 0.99 UJ | 0.99 | 5 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S002 | N | 4 Feb 2015 | 6 - 7 | SW8260B | VOC | Bromobenzene | 0.99 UJ | 0.99 | 5 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S002 | N | 4 Feb 2015 | 6 - 7 | SW8260B | VOC | Bromochloromethane | 0.99 UJ | 0.99 | 5 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S002 | N | 4 Feb 2015 | 6 - 7 | SW8260B | VOC | Bromodichloromethane | 0.99 UJ | 0.99 | 5 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S002 | N | 4 Feb 2015 | 6 - 7 | SW8260B | VOC | Bromoform | 2 UJ | 2 | 5 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S002 | N | 4 Feb 2015 | 6 - 7 | SW8260B | VOC | Bromomethane | 2 UJ | 2 | 5 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S002 | N | 4 Feb 2015 | 6 - 7 | SW8260B | VOC | Carbon tetrachloride | 0.99 UJ | 0.99 | 5 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S002 | N | 4 Feb 2015 | 6 - 7 | SW8260B | VOC | Chlorobenzene | 0.99 UJ | 0.99 | 5 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S002 | N | 4 Feb 2015 | 6 - 7 | SW8260B | VOC | Chloroethane | 2 UJ | 2 | 5 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S002 | N | 4 Feb 2015 | 6 - 7 | SW8260B | VOC | Chloromethane | 2 UJ | 2 | 5 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S002 | N | 4 Feb 2015 | 6 - 7 | SW8260B | VOC | Chlorotrifluoroethylene | 2 UJ | 2 | 9.9 | 10 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S002 | N | 4 Feb 2015 | 6 - 7 | SW8260B | VOC | cis-1,2-Dichloroethene | 0.99 UJ | 0.99 | 5 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S002 | N | 4 Feb 2015 | 6 - 7 | SW8260B | VOC | cis-1,3-Dichloropropene | 0.99 UJ | 0.99 | 5 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S002 | N | 4 Feb 2015 | 6 - 7 | SW8260B | VOC | Dibromochloromethane | 0.99 UJ | 0.99 | 5 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S002 | N | 4 Feb 2015 | 6 - 7 | SW8260B | VOC | Dibromomethane | 0.99 UJ | 0.99 | 5 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S002 | N | 4 Feb 2015 | 6 - 7 | SW8260B | VOC | Dichlorodifluoromethane | 2 UJ | 2 | 5 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S002 | N | 4 Feb 2015 | 6 - 7 | SW8260B | VOC | Ethylbenzene | 6.6 J | 0.99 | 5 | 5 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S002 | N | 4 Feb 2015 | 6 - 7 | SW8260B | VOC | Hexachlorobutadiene | 2 UJ | 2 | 5 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S002 | N | 4 Feb 2015 | 6 - 7 | SW8260B | VOC | Isopropylbenzene | 0.99 UJ | 0.99 | 5 | 5 | µg/kg | | N |

APPENDIX E-2

**Analytical Data 2015 Biovent Sampling**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | SL | Units | Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1294 | BVBS1294S002 | N | 4 Feb 2015 | 6 - 7 | SW8260B | VOC | m,p-Xylenes | 3.1 J | 2 | 5 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S002 | N | 4 Feb 2015 | 6 - 7 | SW8260B | VOC | Methylene chloride | 2 J | 2 | 9.9 | 10 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S002 | N | 4 Feb 2015 | 6 - 7 | SW8260B | VOC | Methyl-tert-butyl Ether (MTBE) | 0.99 UJ | 0.99 | 5 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S002 | N | 4 Feb 2015 | 6 - 7 | SW8260B | VOC | n-butylbenzene | 11 J | 0.99 | 5 | 5 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S002 | N | 4 Feb 2015 | 6 - 7 | SW8260B | VOC | n-Propylbenzene | 12 J | 0.99 | 5 | 5 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S002 | N | 4 Feb 2015 | 6 - 7 | SW8260B | VOC | o-Xylene | 5 J | 0.99 | 5 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S002 | N | 4 Feb 2015 | 6 - 7 | SW8260B | VOC | p-Isopropyltoluene | 4.2 J | 0.99 | 5 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S002 | N | 4 Feb 2015 | 6 - 7 | SW8260B | VOC | sec-Butylbenzene | 16 J | 0.99 | 5 | 5 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S002 | N | 4 Feb 2015 | 6 - 7 | SW8260B | VOC | Styrene | 0.99 UJ | 0.99 | 5 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S002 | N | 4 Feb 2015 | 6 - 7 | SW8260B | VOC | tert-Butanol (TBA) | 9.9 UJ | 9.9 | 50 | | µg/kg | | NC |
| SO | BVBS1294 | BVBS1294S002 | N | 4 Feb 2015 | 6 - 7 | SW8260B | VOC | tert-Butylbenzene | 1.5 J | 0.99 | 5 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S002 | N | 4 Feb 2015 | 6 - 7 | SW8260B | VOC | Tetrachloroethene | 0.99 UJ | 0.99 | 5 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S002 | N | 4 Feb 2015 | 6 - 7 | SW8260B | VOC | Toluene | 1.2 J | 0.99 | 5 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S002 | N | 4 Feb 2015 | 6 - 7 | SW8260B | VOC | trans-1,2-Dichloroethene | 0.99 UJ | 0.99 | 5 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S002 | N | 4 Feb 2015 | 6 - 7 | SW8260B | VOC | trans-1,3-Dichloropropene | 0.99 UJ | 0.99 | 5 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S002 | N | 4 Feb 2015 | 6 - 7 | SW8260B | VOC | Trichloroethene | 0.99 UJ | 0.99 | 5 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S002 | N | 4 Feb 2015 | 6 - 7 | SW8260B | VOC | Trichlorofluoromethane | 2 UJ | 2 | 5 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S002 | N | 4 Feb 2015 | 6 - 7 | SW8260B | VOC | Trichloromethane (Chloroform) | 0.99 UJ | 0.99 | 5 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S002 | N | 4 Feb 2015 | 6 - 7 | SW8260B | VOC | Vinyl chloride | 2 UJ | 2 | 5 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S003 | N | 3 Mar 2015 | 2 - 4 | SW9045D | GENCHEM | pH | 6.01 = | | | | pH units | | NC |
| SO | BVBS1294 | BVBS1294S003 | N | 3 Mar 2015 | 2 - 4 | SW8015B | HC | Diesel Range Organics (C12-C14) | 17000 = | 3100 | 6300 | 5000 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S003 | N | 3 Mar 2015 | 2 - 4 | SW8015B | HC | Diesel Range Organics (C15-C20) | 54000 = | 3100 | 6300 | 5000 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S003 | N | 3 Mar 2015 | 2 - 4 | SW8015B | HC | Diesel Range Organics (C21-C30) | 13000 = | 3100 | 6300 | 5000 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S003 | N | 3 Mar 2015 | 2 - 4 | SW8015B | HC | Diesel Range Organics (C8-C11) | 6300 U | 3100 | 6300 | 1000 | µg/kg | X | RL |
| SO | BVBS1294 | BVBS1294S003 | N | 3 Mar 2015 | 2 - 4 | SW8015B | HC | GRO (C4-C12) | 1200 U | 620 | 1200 | 1000 | µg/kg | X | N |
| SO | BVBS1294 | BVBS1294S003 | N | 3 Mar 2015 | 2 - 4 | SW8015B | HC | ORO (C31-C40) | 13000 U | 6300 | 13000 | 10000 | µg/kg | X | N |
| SO | BVBS1294 | BVBS1294S003 | N | 3 Mar 2015 | 2 - 4 | SW8015B | HC | TOTAL EFH(C8-C40) | 88000 = | 3100 | 6300 | 10000 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S003 | N | 3 Mar 2015 | 2 - 4 | SW8270C-SIM | PAH | 1-Methylnaphthalene | 13 U | 6.3 | 13 | 2.5 | µg/kg | X | RL |
| SO | BVBS1294 | BVBS1294S003 | N | 3 Mar 2015 | 2 - 4 | SW8270C-SIM | PAH | 2-Methylnaphthalene | 13 U | 6.3 | 13 | 2.5 | µg/kg | X | RL |
| SO | BVBS1294 | BVBS1294S003 | N | 3 Mar 2015 | 2 - 4 | SW8270C-SIM | PAH | Acenaphthene | 13 U | 6.3 | 13 | 2.5 | µg/kg | X | RL |
| SO | BVBS1294 | BVBS1294S003 | N | 3 Mar 2015 | 2 - 4 | SW8270C-SIM | PAH | Acenaphthylene | 13 U | 6.3 | 13 | 2.5 | µg/kg | X | RL |
| SO | BVBS1294 | BVBS1294S003 | N | 3 Mar 2015 | 2 - 4 | SW8270C-SIM | PAH | Anthracene | 6.7 J | 6.3 | 13 | 2.5 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S003 | N | 3 Mar 2015 | 2 - 4 | SW8270C-SIM | PAH | Benzo(a)anthracene | 17 = | 6.3 | 13 | | µg/kg | | NC |
| SO | BVBS1294 | BVBS1294S003 | N | 3 Mar 2015 | 2 - 4 | SW8270C-SIM | PAH | Benzo(a)pyrene | 10 J | 6.3 | 13 | | µg/kg | | NC |
| SO | BVBS1294 | BVBS1294S003 | N | 3 Mar 2015 | 2 - 4 | SW8270C-SIM | PAH | Benzo(b)fluoranthene | 14 = | 6.3 | 13 | | µg/kg | | NC |
| SO | BVBS1294 | BVBS1294S003 | N | 3 Mar 2015 | 2 - 4 | SW8270C-SIM | PAH | Benzo(ghi)perylene | 26 = | 6.3 | 13 | 2.5 | µg/kg | X | Y |

APPENDIX E-2

**Analytical Data 2015 Biovent Sampling**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | SL | Units | Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1294 | BVBS1294S003 | N | 3 Mar 2015 | 2 - 4 | SW8270C-SIM | PAH | Benzo(k)fluoranthene | 13 U | 6.3 | 13 | | µg/kg | | NC |
| SO | BVBS1294 | BVBS1294S003 | N | 3 Mar 2015 | 2 - 4 | SW8270C-SIM | PAH | Chrysene | 9.4 J | 6.3 | 13 | | µg/kg | | NC |
| SO | BVBS1294 | BVBS1294S003 | N | 3 Mar 2015 | 2 - 4 | SW8270C-SIM | PAH | Dibenzo(a,h)anthracene | 13 U | 6.3 | 13 | | µg/kg | | NC |
| SO | BVBS1294 | BVBS1294S003 | N | 3 Mar 2015 | 2 - 4 | SW8270C-SIM | PAH | Fluoranthene | 59 J | 6.3 | 13 | 5.2 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S003 | N | 3 Mar 2015 | 2 - 4 | SW8270C-SIM | PAH | Fluorene | 13 U | 6.3 | 13 | 3.8 | µg/kg | X | RL |
| SO | BVBS1294 | BVBS1294S003 | N | 3 Mar 2015 | 2 - 4 | SW8270C-SIM | PAH | Indeno(1,2,3-cd)pyrene | 15 = | 6.3 | 13 | | µg/kg | | NC |
| SO | BVBS1294 | BVBS1294S003 | N | 3 Mar 2015 | 2 - 4 | SW8270C-SIM | PAH | Naphthalene | 13 U | 6.3 | 13 | 3.6 | µg/kg | X | RL |
| SO | BVBS1294 | BVBS1294S003 | N | 3 Mar 2015 | 2 - 4 | SW8270C-SIM | PAH | PAHTEQM | 14.694 = | | | 4.47 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S003 | N | 3 Mar 2015 | 2 - 4 | SW8270C-SIM | PAH | Phenanthrene | 8.2 J | 6.3 | 13 | 3.9 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S003 | N | 3 Mar 2015 | 2 - 4 | SW8270C-SIM | PAH | Pyrene | 73 J | 6.3 | 13 | 5.6 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S003 | N | 3 Mar 2015 | 2 - 4 | SW8270C-SIM | PHTH | Bis(2-ethylhexyl)phthalate | 380 J | 13 | 25 | 61 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S003 | N | 3 Mar 2015 | 2 - 4 | SW8270C-SIM | PHTH | Butyl benzyl phthalate | 25 U | 13 | 25 | 100 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S003 | N | 3 Mar 2015 | 2 - 4 | SW8270C-SIM | PHTH | Diethyl phthalate | 25 U | 13 | 25 | 27 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S003 | N | 3 Mar 2015 | 2 - 4 | SW8270C-SIM | PHTH | Dimethyl phthalate | 25 U | 13 | 25 | 27 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S003 | N | 3 Mar 2015 | 2 - 4 | SW8270C-SIM | PHTH | Di-n-butyl phthalate | 25 U | 13 | 25 | 27 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S003 | N | 3 Mar 2015 | 2 - 4 | SW8270C-SIM | PHTH | Di-n-octyl phthalate | 25 U | 13 | 25 | 27 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S003 | N | 3 Mar 2015 | 2 - 4 | SW8260B | SVOC | Diisopropyl ether | 1.1 U | 1.1 | 11 | 10 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S003 | N | 3 Mar 2015 | 2 - 4 | SW8270C-SIM | SVOC | n-Nitrosodimethylamine | 25 U | 13 | 25 | 10 | µg/kg | X | RL |
| SO | BVBS1294 | BVBS1294S003 | N | 3 Mar 2015 | 2 - 4 | SW8260B | SVOC | tert-Amyl methyl ether | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S003 | N | 3 Mar 2015 | 2 - 4 | SW8260B | SVOC | tert-Butyl ethyl ether | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S003 | N | 3 Mar 2015 | 2 - 4 | SW8260B | VOC | 1,1,1,2-Tetrachloroethane | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S003 | N | 3 Mar 2015 | 2 - 4 | SW8260B | VOC | 1,1,1-Trichloroethane | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S003 | N | 3 Mar 2015 | 2 - 4 | SW8260B | VOC | 1,1,2,2-Tetrachloroethane | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S003 | N | 3 Mar 2015 | 2 - 4 | SW8260B | VOC | 1,1,2-Trichloro-1,2,2-trifluoroethane | 2.3 U | 2.3 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S003 | N | 3 Mar 2015 | 2 - 4 | SW8260B | VOC | 1,1,2-Trichloroethane | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S003 | N | 3 Mar 2015 | 2 - 4 | SW8260B | VOC | 1,1-Dichloroethane | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S003 | N | 3 Mar 2015 | 2 - 4 | SW8260B | VOC | 1,1-Dichloroethene | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S003 | N | 3 Mar 2015 | 2 - 4 | SW8260B | VOC | 1,1-Dichloropropene | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S003 | N | 3 Mar 2015 | 2 - 4 | SW8260B | VOC | 1,2,3-Trichlorobenzene | 2.3 U | 2.3 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S003 | N | 3 Mar 2015 | 2 - 4 | SW8260B | VOC | 1,2,3-Trichloropropane | 2.3 U | 2.3 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S003 | N | 3 Mar 2015 | 2 - 4 | SW8260B | VOC | 1,2,4-Trichlorobenzene | 2.3 U | 2.3 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S003 | N | 3 Mar 2015 | 2 - 4 | SW8260B | VOC | 1,2,4-Trimethylbenzene | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S003 | N | 3 Mar 2015 | 2 - 4 | SW8260B | VOC | 1,2-Dibromo-3-chloropropane | 2.3 U | 2.3 | 11 | 10 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S003 | N | 3 Mar 2015 | 2 - 4 | SW8260B | VOC | 1,2-Dibromoethane (EDB) | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S003 | N | 3 Mar 2015 | 2 - 4 | SW8260B | VOC | 1,2-Dichlorobenzene | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S003 | N | 3 Mar 2015 | 2 - 4 | SW8260B | VOC | 1,2-Dichloroethane | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |

APPENDIX E-2

**Analytical Data 2015 Biovent Sampling**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | SL | Units | Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1294 | BVBS1294S003 | N | 3 Mar 2015 | 2 - 4 | SW8260B | VOC | 1,2-Dichloropropane | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S003 | N | 3 Mar 2015 | 2 - 4 | SW8260B | VOC | 1,3,5-Trimethylbenzene | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S003 | N | 3 Mar 2015 | 2 - 4 | SW8260B | VOC | 1,3-Dichlorobenzene | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S003 | N | 3 Mar 2015 | 2 - 4 | SW8260B | VOC | 1,3-Dichloropropane | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S003 | N | 3 Mar 2015 | 2 - 4 | SW8260B | VOC | 1,4-Dichlorobenzene | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S003 | N | 3 Mar 2015 | 2 - 4 | SW8260B | VOC | 2,2-Dichloropropane | 2.3 U | 2.3 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S003 | N | 3 Mar 2015 | 2 - 4 | SW8260B | VOC | 2-Butanone (MEK) | 5.7 U | 5.7 | 23 | 20 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S003 | N | 3 Mar 2015 | 2 - 4 | SW8260B | VOC | 2-Chloro-1,1,1-trifluoroethane | 2.3 U | 2.3 | 11 | 10 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S003 | N | 3 Mar 2015 | 2 - 4 | SW8260B | VOC | 2-Chloroethyl vinyl ether | 2.3 U | 2.3 | 11 | 10 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S003 | N | 3 Mar 2015 | 2 - 4 | SW8260B | VOC | 2-Chlorotoluene | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S003 | N | 3 Mar 2015 | 2 - 4 | SW8260B | VOC | 2-Hexanone | 5.7 U | 5.7 | 11 | 10 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S003 | N | 3 Mar 2015 | 2 - 4 | SW8260B | VOC | 4-Chlorotoluene | 1.1 U | 1.1 | 11 | 10 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S003 | N | 3 Mar 2015 | 2 - 4 | SW8260B | VOC | 4-Methyl-2-pentanone (MIBK) | 5.7 U | 5.7 | 11 | 10 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S003 | N | 3 Mar 2015 | 2 - 4 | SW8260B | VOC | Acetone | 5.7 U | 5.7 | 23 | 20 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S003 | N | 3 Mar 2015 | 2 - 4 | SW8260B | VOC | Benzene | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S003 | N | 3 Mar 2015 | 2 - 4 | SW8260B | VOC | Bromobenzene | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S003 | N | 3 Mar 2015 | 2 - 4 | SW8260B | VOC | Bromochloromethane | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S003 | N | 3 Mar 2015 | 2 - 4 | SW8260B | VOC | Bromodichloromethane | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S003 | N | 3 Mar 2015 | 2 - 4 | SW8260B | VOC | Bromoform | 2.3 U | 2.3 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S003 | N | 3 Mar 2015 | 2 - 4 | SW8260B | VOC | Bromomethane | 2.3 U | 2.3 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S003 | N | 3 Mar 2015 | 2 - 4 | SW8260B | VOC | Carbon tetrachloride | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S003 | N | 3 Mar 2015 | 2 - 4 | SW8260B | VOC | Chlorobenzene | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S003 | N | 3 Mar 2015 | 2 - 4 | SW8260B | VOC | Chloroethane | 2.3 U | 2.3 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S003 | N | 3 Mar 2015 | 2 - 4 | SW8260B | VOC | Chloromethane | 2.3 U | 2.3 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S003 | N | 3 Mar 2015 | 2 - 4 | SW8260B | VOC | Chlorotrifluoroethylene | 2.3 U | 2.3 | 11 | 10 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S003 | N | 3 Mar 2015 | 2 - 4 | SW8260B | VOC | cis-1,2-Dichloroethene | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S003 | N | 3 Mar 2015 | 2 - 4 | SW8260B | VOC | cis-1,3-Dichloropropene | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S003 | N | 3 Mar 2015 | 2 - 4 | SW8260B | VOC | Dibromochloromethane | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S003 | N | 3 Mar 2015 | 2 - 4 | SW8260B | VOC | Dibromomethane | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S003 | N | 3 Mar 2015 | 2 - 4 | SW8260B | VOC | Dichlorodifluoromethane | 2.3 U | 2.3 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S003 | N | 3 Mar 2015 | 2 - 4 | SW8260B | VOC | Ethylbenzene | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S003 | N | 3 Mar 2015 | 2 - 4 | SW8260B | VOC | Hexachlorobutadiene | 2.3 U | 2.3 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S003 | N | 3 Mar 2015 | 2 - 4 | SW8260B | VOC | Isopropylbenzene | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S003 | N | 3 Mar 2015 | 2 - 4 | SW8260B | VOC | m,p-Xylenes | 2.3 U | 2.3 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S003 | N | 3 Mar 2015 | 2 - 4 | SW8260B | VOC | Methylene chloride | 2.3 U | 2.3 | 11 | 10 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S003 | N | 3 Mar 2015 | 2 - 4 | SW8260B | VOC | Methyl-tert-butyl Ether (MTBE) | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |

APPENDIX E-2

**Analytical Data 2015 Biovent Sampling**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | SL | Units | Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1294 | BVBS1294S003 | N | 3 Mar 2015 | 2 - 4 | SW8260B | VOC | n-butylbenzene | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S003 | N | 3 Mar 2015 | 2 - 4 | SW8260B | VOC | n-Propylbenzene | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S003 | N | 3 Mar 2015 | 2 - 4 | SW8260B | VOC | o-Xylene | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S003 | N | 3 Mar 2015 | 2 - 4 | SW8260B | VOC | p-Isopropyltoluene | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S003 | N | 3 Mar 2015 | 2 - 4 | SW8260B | VOC | sec-Butylbenzene | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S003 | N | 3 Mar 2015 | 2 - 4 | SW8260B | VOC | Styrene | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S003 | N | 3 Mar 2015 | 2 - 4 | SW8260B | VOC | tert-Butanol (TBA) | 11 U | 11 | 57 | | µg/kg | | NC |
| SO | BVBS1294 | BVBS1294S003 | N | 3 Mar 2015 | 2 - 4 | SW8260B | VOC | tert-Butylbenzene | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S003 | N | 3 Mar 2015 | 2 - 4 | SW8260B | VOC | Tetrachloroethene | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S003 | N | 3 Mar 2015 | 2 - 4 | SW8260B | VOC | Toluene | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S003 | N | 3 Mar 2015 | 2 - 4 | SW8260B | VOC | trans-1,2-Dichloroethene | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S003 | N | 3 Mar 2015 | 2 - 4 | SW8260B | VOC | trans-1,3-Dichloropropene | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S003 | N | 3 Mar 2015 | 2 - 4 | SW8260B | VOC | Trichloroethene | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S003 | N | 3 Mar 2015 | 2 - 4 | SW8260B | VOC | Trichlorofluoromethane | 2.3 U | 2.3 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S003 | N | 3 Mar 2015 | 2 - 4 | SW8260B | VOC | Trichloromethane (Chloroform) | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S003 | N | 3 Mar 2015 | 2 - 4 | SW8260B | VOC | Vinyl chloride | 2.3 U | 2.3 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D003 | FD | 3 Mar 2015 | 2 - 4 | SW9045D | GENCHEM | pH | 5.86 = | | | | pH units | | NC |
| SO | BVBS1294 | BVBS1294D003 | FD | 3 Mar 2015 | 2 - 4 | SW8015B | HC | Diesel Range Organics (C12-C14) | 19000 = | 3000 | 5900 | 5000 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294D003 | FD | 3 Mar 2015 | 2 - 4 | SW8015B | HC | Diesel Range Organics (C15-C20) | 55000 = | 3000 | 5900 | 5000 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294D003 | FD | 3 Mar 2015 | 2 - 4 | SW8015B | HC | Diesel Range Organics (C21-C30) | 8200 = | 3000 | 5900 | 5000 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294D003 | FD | 3 Mar 2015 | 2 - 4 | SW8015B | HC | Diesel Range Organics (C8-C11) | 5900 U | 3000 | 5900 | 1000 | µg/kg | X | RL |
| SO | BVBS1294 | BVBS1294D003 | FD | 3 Mar 2015 | 2 - 4 | SW8015B | HC | GRO (C4-C12) | 1100 U | 530 | 1100 | 1000 | µg/kg | X | N |
| SO | BVBS1294 | BVBS1294D003 | FD | 3 Mar 2015 | 2 - 4 | SW8015B | HC | ORO (C31-C40) | 12000 U | 5900 | 12000 | 10000 | µg/kg | X | N |
| SO | BVBS1294 | BVBS1294D003 | FD | 3 Mar 2015 | 2 - 4 | SW8015B | HC | TOTAL EFH(C8-C40) | 84000 = | 3000 | 5900 | 10000 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294D003 | FD | 3 Mar 2015 | 2 - 4 | SW8270C-SIM | PAH | 1-Methylnaphthalene | 12 U | 5.9 | 12 | 2.5 | µg/kg | X | RL |
| SO | BVBS1294 | BVBS1294D003 | FD | 3 Mar 2015 | 2 - 4 | SW8270C-SIM | PAH | 2-Methylnaphthalene | 12 U | 5.9 | 12 | 2.5 | µg/kg | X | RL |
| SO | BVBS1294 | BVBS1294D003 | FD | 3 Mar 2015 | 2 - 4 | SW8270C-SIM | PAH | Acenaphthene | 12 U | 5.9 | 12 | 2.5 | µg/kg | X | RL |
| SO | BVBS1294 | BVBS1294D003 | FD | 3 Mar 2015 | 2 - 4 | SW8270C-SIM | PAH | Acenaphthylene | 12 U | 5.9 | 12 | 2.5 | µg/kg | X | RL |
| SO | BVBS1294 | BVBS1294D003 | FD | 3 Mar 2015 | 2 - 4 | SW8270C-SIM | PAH | Anthracene | 12 U | 5.9 | 12 | 2.5 | µg/kg | X | RL |
| SO | BVBS1294 | BVBS1294D003 | FD | 3 Mar 2015 | 2 - 4 | SW8270C-SIM | PAH | Benzo(a)anthracene | 12 U | 5.9 | 12 | | µg/kg | | NC |
| SO | BVBS1294 | BVBS1294D003 | FD | 3 Mar 2015 | 2 - 4 | SW8270C-SIM | PAH | Benzo(a)pyrene | 12 U | 5.9 | 12 | | µg/kg | | NC |
| SO | BVBS1294 | BVBS1294D003 | FD | 3 Mar 2015 | 2 - 4 | SW8270C-SIM | PAH | Benzo(b)fluoranthene | 12 U | 5.9 | 12 | | µg/kg | | NC |
| SO | BVBS1294 | BVBS1294D003 | FD | 3 Mar 2015 | 2 - 4 | SW8270C-SIM | PAH | Benzo(ghi)perylene | 9.6 J | 5.9 | 12 | 2.5 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294D003 | FD | 3 Mar 2015 | 2 - 4 | SW8270C-SIM | PAH | Benzo(k)fluoranthene | 12 U | 5.9 | 12 | | µg/kg | | NC |
| SO | BVBS1294 | BVBS1294D003 | FD | 3 Mar 2015 | 2 - 4 | SW8270C-SIM | PAH | Chrysene | 12 U | 5.9 | 12 | | µg/kg | | NC |
| SO | BVBS1294 | BVBS1294D003 | FD | 3 Mar 2015 | 2 - 4 | SW8270C-SIM | PAH | Dibenzo(a,h)anthracene | 12 U | 5.9 | 12 | | µg/kg | | NC |

APPENDIX E-2

**Analytical Data 2015 Biovent Sampling**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | SL | Units | Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1294 | BVBS1294D003 | FD | 3 Mar 2015 | 2 - 4 | SW8270C-SIM | PAH | Fluoranthene | 12 J | 5.9 | 12 | 5.2 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294D003 | FD | 3 Mar 2015 | 2 - 4 | SW8270C-SIM | PAH | Fluorene | 12 U | 5.9 | 12 | 3.8 | µg/kg | X | RL |
| SO | BVBS1294 | BVBS1294D003 | FD | 3 Mar 2015 | 2 - 4 | SW8270C-SIM | PAH | Indeno(1,2,3-cd)pyrene | 6.6 J | 5.9 | 12 | | µg/kg | | NC |
| SO | BVBS1294 | BVBS1294D003 | FD | 3 Mar 2015 | 2 - 4 | SW8270C-SIM | PAH | Naphthalene | 12 U | 5.9 | 12 | 3.6 | µg/kg | X | RL |
| SO | BVBS1294 | BVBS1294D003 | FD | 3 Mar 2015 | 2 - 4 | SW8270C-SIM | PAH | PAHTEQM | 0.66 = | | | 4.47 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D003 | FD | 3 Mar 2015 | 2 - 4 | SW8270C-SIM | PAH | Phenanthrene | 12 U | 5.9 | 12 | 3.9 | µg/kg | X | RL |
| SO | BVBS1294 | BVBS1294D003 | FD | 3 Mar 2015 | 2 - 4 | SW8270C-SIM | PAH | Pyrene | 15 J | 5.9 | 12 | 5.6 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294D003 | FD | 3 Mar 2015 | 2 - 4 | SW8270C-SIM | PHTH | Bis(2-ethylhexyl)phthalate | 110 J | 12 | 24 | 61 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294D003 | FD | 3 Mar 2015 | 2 - 4 | SW8270C-SIM | PHTH | Butyl benzyl phthalate | 24 U | 12 | 24 | 100 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D003 | FD | 3 Mar 2015 | 2 - 4 | SW8270C-SIM | PHTH | Diethyl phthalate | 24 U | 12 | 24 | 27 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D003 | FD | 3 Mar 2015 | 2 - 4 | SW8270C-SIM | PHTH | Dimethyl phthalate | 24 U | 12 | 24 | 27 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D003 | FD | 3 Mar 2015 | 2 - 4 | SW8270C-SIM | PHTH | Di-n-butyl phthalate | 24 U | 12 | 24 | 27 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D003 | FD | 3 Mar 2015 | 2 - 4 | SW8270C-SIM | PHTH | Di-n-octyl phthalate | 24 U | 12 | 24 | 27 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D003 | FD | 3 Mar 2015 | 2 - 4 | SW8260B | SVOC | Diisopropyl ether | 1.1 U | 1.1 | 11 | 10 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D003 | FD | 3 Mar 2015 | 2 - 4 | SW8270C-SIM | SVOC | n-Nitrosodimethylamine | 24 U | 12 | 24 | 10 | µg/kg | X | RL |
| SO | BVBS1294 | BVBS1294D003 | FD | 3 Mar 2015 | 2 - 4 | SW8260B | SVOC | tert-Amyl methyl ether | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D003 | FD | 3 Mar 2015 | 2 - 4 | SW8260B | SVOC | tert-Butyl ethyl ether | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D003 | FD | 3 Mar 2015 | 2 - 4 | SW8260B | VOC | 1,1,1,2-Tetrachloroethane | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D003 | FD | 3 Mar 2015 | 2 - 4 | SW8260B | VOC | 1,1,1-Trichloroethane | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D003 | FD | 3 Mar 2015 | 2 - 4 | SW8260B | VOC | 1,1,2,2-Tetrachloroethane | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D003 | FD | 3 Mar 2015 | 2 - 4 | SW8260B | VOC | 1,1,2-Trichloro-1,2,2-trifluoroethane | 2.2 U | 2.2 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D003 | FD | 3 Mar 2015 | 2 - 4 | SW8260B | VOC | 1,1,2-Trichloroethane | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D003 | FD | 3 Mar 2015 | 2 - 4 | SW8260B | VOC | 1,1-Dichloroethane | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D003 | FD | 3 Mar 2015 | 2 - 4 | SW8260B | VOC | 1,1-Dichloroethene | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D003 | FD | 3 Mar 2015 | 2 - 4 | SW8260B | VOC | 1,1-Dichloropropene | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D003 | FD | 3 Mar 2015 | 2 - 4 | SW8260B | VOC | 1,2,3-Trichlorobenzene | 2.2 U | 2.2 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D003 | FD | 3 Mar 2015 | 2 - 4 | SW8260B | VOC | 1,2,3-Trichloropropane | 2.2 U | 2.2 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D003 | FD | 3 Mar 2015 | 2 - 4 | SW8260B | VOC | 1,2,4-Trichlorobenzene | 2.2 U | 2.2 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D003 | FD | 3 Mar 2015 | 2 - 4 | SW8260B | VOC | 1,2,4-Trimethylbenzene | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D003 | FD | 3 Mar 2015 | 2 - 4 | SW8260B | VOC | 1,2-Dibromo-3-chloropropane | 2.2 U | 2.2 | 11 | 10 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D003 | FD | 3 Mar 2015 | 2 - 4 | SW8260B | VOC | 1,2-Dibromoethane (EDB) | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D003 | FD | 3 Mar 2015 | 2 - 4 | SW8260B | VOC | 1,2-Dichlorobenzene | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D003 | FD | 3 Mar 2015 | 2 - 4 | SW8260B | VOC | 1,2-Dichloroethane | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D003 | FD | 3 Mar 2015 | 2 - 4 | SW8260B | VOC | 1,2-Dichloropropane | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D003 | FD | 3 Mar 2015 | 2 - 4 | SW8260B | VOC | 1,3,5-Trimethylbenzene | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D003 | FD | 3 Mar 2015 | 2 - 4 | SW8260B | VOC | 1,3-Dichlorobenzene | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |

APPENDIX E-2

**Analytical Data 2015 Biovent Sampling**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | SL | Units | Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1294 | BVBS1294D003 | FD | 3 Mar 2015 | 2 - 4 | SW8260B | VOC | 1,3-Dichloropropane | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D003 | FD | 3 Mar 2015 | 2 - 4 | SW8260B | VOC | 1,4-Dichlorobenzene | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D003 | FD | 3 Mar 2015 | 2 - 4 | SW8260B | VOC | 2,2-Dichloropropane | 2.2 U | 2.2 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D003 | FD | 3 Mar 2015 | 2 - 4 | SW8260B | VOC | 2-Butanone (MEK) | 5.5 U | 5.5 | 22 | 20 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D003 | FD | 3 Mar 2015 | 2 - 4 | SW8260B | VOC | 2-Chloro-1,1,1-trifluoroethane | 2.2 U | 2.2 | 11 | 10 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D003 | FD | 3 Mar 2015 | 2 - 4 | SW8260B | VOC | 2-Chloroethyl vinyl ether | 2.2 U | 2.2 | 11 | 10 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D003 | FD | 3 Mar 2015 | 2 - 4 | SW8260B | VOC | 2-Chlorotoluene | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D003 | FD | 3 Mar 2015 | 2 - 4 | SW8260B | VOC | 2-Hexanone | 5.5 U | 5.5 | 11 | 10 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D003 | FD | 3 Mar 2015 | 2 - 4 | SW8260B | VOC | 4-Chlorotoluene | 1.1 U | 1.1 | 11 | 10 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D003 | FD | 3 Mar 2015 | 2 - 4 | SW8260B | VOC | 4-Methyl-2-pentanone (MIBK) | 5.5 U | 5.5 | 11 | 10 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D003 | FD | 3 Mar 2015 | 2 - 4 | SW8260B | VOC | Acetone | 5.5 U | 5.5 | 22 | 20 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D003 | FD | 3 Mar 2015 | 2 - 4 | SW8260B | VOC | Benzene | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D003 | FD | 3 Mar 2015 | 2 - 4 | SW8260B | VOC | Bromobenzene | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D003 | FD | 3 Mar 2015 | 2 - 4 | SW8260B | VOC | Bromochloromethane | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D003 | FD | 3 Mar 2015 | 2 - 4 | SW8260B | VOC | Bromodichloromethane | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D003 | FD | 3 Mar 2015 | 2 - 4 | SW8260B | VOC | Bromoform | 2.2 U | 2.2 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D003 | FD | 3 Mar 2015 | 2 - 4 | SW8260B | VOC | Bromomethane | 2.2 U | 2.2 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D003 | FD | 3 Mar 2015 | 2 - 4 | SW8260B | VOC | Carbon tetrachloride | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D003 | FD | 3 Mar 2015 | 2 - 4 | SW8260B | VOC | Chlorobenzene | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D003 | FD | 3 Mar 2015 | 2 - 4 | SW8260B | VOC | Chloroethane | 2.2 U | 2.2 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D003 | FD | 3 Mar 2015 | 2 - 4 | SW8260B | VOC | Chloromethane | 2.2 U | 2.2 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D003 | FD | 3 Mar 2015 | 2 - 4 | SW8260B | VOC | Chlorotrifluoroethylene | 2.2 U | 2.2 | 11 | 10 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D003 | FD | 3 Mar 2015 | 2 - 4 | SW8260B | VOC | cis-1,2-Dichloroethene | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D003 | FD | 3 Mar 2015 | 2 - 4 | SW8260B | VOC | cis-1,3-Dichloropropene | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D003 | FD | 3 Mar 2015 | 2 - 4 | SW8260B | VOC | Dibromochloromethane | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D003 | FD | 3 Mar 2015 | 2 - 4 | SW8260B | VOC | Dibromomethane | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D003 | FD | 3 Mar 2015 | 2 - 4 | SW8260B | VOC | Dichlorodifluoromethane | 2.2 U | 2.2 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D003 | FD | 3 Mar 2015 | 2 - 4 | SW8260B | VOC | Ethylbenzene | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D003 | FD | 3 Mar 2015 | 2 - 4 | SW8260B | VOC | Hexachlorobutadiene | 2.2 U | 2.2 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D003 | FD | 3 Mar 2015 | 2 - 4 | SW8260B | VOC | Isopropylbenzene | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D003 | FD | 3 Mar 2015 | 2 - 4 | SW8260B | VOC | m,p-Xylenes | 2.2 U | 2.2 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D003 | FD | 3 Mar 2015 | 2 - 4 | SW8260B | VOC | Methylene chloride | 2.2 U | 2.2 | 11 | 10 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D003 | FD | 3 Mar 2015 | 2 - 4 | SW8260B | VOC | Methyl-tert-butyl Ether (MTBE) | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D003 | FD | 3 Mar 2015 | 2 - 4 | SW8260B | VOC | n-butylbenzene | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D003 | FD | 3 Mar 2015 | 2 - 4 | SW8260B | VOC | n-Propylbenzene | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D003 | FD | 3 Mar 2015 | 2 - 4 | SW8260B | VOC | o-Xylene | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |

APPENDIX E-2

**Analytical Data 2015 Biovent Sampling**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | SL | Units | Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1294 | BVBS1294D003 | FD | 3 Mar 2015 | 2 - 4 | SW8260B | VOC | p-Isopropyltoluene | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D003 | FD | 3 Mar 2015 | 2 - 4 | SW8260B | VOC | sec-Butylbenzene | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D003 | FD | 3 Mar 2015 | 2 - 4 | SW8260B | VOC | Styrene | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D003 | FD | 3 Mar 2015 | 2 - 4 | SW8260B | VOC | tert-Butanol (TBA) | 11 U | 11 | 55 | | µg/kg | | NC |
| SO | BVBS1294 | BVBS1294D003 | FD | 3 Mar 2015 | 2 - 4 | SW8260B | VOC | tert-Butylbenzene | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D003 | FD | 3 Mar 2015 | 2 - 4 | SW8260B | VOC | Tetrachloroethene | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D003 | FD | 3 Mar 2015 | 2 - 4 | SW8260B | VOC | Toluene | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D003 | FD | 3 Mar 2015 | 2 - 4 | SW8260B | VOC | trans-1,2-Dichloroethene | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D003 | FD | 3 Mar 2015 | 2 - 4 | SW8260B | VOC | trans-1,3-Dichloropropene | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D003 | FD | 3 Mar 2015 | 2 - 4 | SW8260B | VOC | Trichloroethene | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D003 | FD | 3 Mar 2015 | 2 - 4 | SW8260B | VOC | Trichlorofluoromethane | 2.2 U | 2.2 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D003 | FD | 3 Mar 2015 | 2 - 4 | SW8260B | VOC | Trichloromethane (Chloroform) | 1.1 U | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D003 | FD | 3 Mar 2015 | 2 - 4 | SW8260B | VOC | Vinyl chloride | 2.2 U | 2.2 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S004 | N | 3 Mar 2015 | 6 - 7 | SW9045D | GENCHEM | pH | 7.27 = | | | | pH units | | NC |
| SO | BVBS1294 | BVBS1294S004 | N | 3 Mar 2015 | 6 - 7 | SW8015B | HC | Diesel Range Organics (C12-C14) | 5900000 = | 59000 | 1E+05 | 5000 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S004 | N | 3 Mar 2015 | 6 - 7 | SW8015B | HC | Diesel Range Organics (C15-C20) | 3100000 = | 59000 | 1E+05 | 5000 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S004 | N | 3 Mar 2015 | 6 - 7 | SW8015B | HC | Diesel Range Organics (C21-C30) | 120000 U | 59000 | 1E+05 | 5000 | µg/kg | X | RL |
| SO | BVBS1294 | BVBS1294S004 | N | 3 Mar 2015 | 6 - 7 | SW8015B | HC | Diesel Range Organics (C8-C11) | 1700000 = | 59000 | 1E+05 | 1000 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S004 | N | 3 Mar 2015 | 6 - 7 | SW8015B | HC | GRO (C4-C12) | 1200000 = | 10000 | 20000 | 1000 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S004 | N | 3 Mar 2015 | 6 - 7 | SW8015B | HC | ORO (C31-C40) | 240000 U | 1E+05 | 2E+05 | 10000 | µg/kg | X | RL |
| SO | BVBS1294 | BVBS1294S004 | N | 3 Mar 2015 | 6 - 7 | SW8015B | HC | TOTAL EFH(C8-C40) | 11000000 = | 59000 | 1E+05 | 10000 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S004 | N | 3 Mar 2015 | 6 - 7 | SW8270C-SIM | PAH | 1-Methylnaphthalene | 12 U | 5.9 | 12 | 2.5 | µg/kg | X | RL |
| SO | BVBS1294 | BVBS1294S004 | N | 3 Mar 2015 | 6 - 7 | SW8270C-SIM | PAH | 2-Methylnaphthalene | 12 U | 5.9 | 12 | 2.5 | µg/kg | X | RL |
| SO | BVBS1294 | BVBS1294S004 | N | 3 Mar 2015 | 6 - 7 | SW8270C-SIM | PAH | Acenaphthene | 12 U | 5.9 | 12 | 2.5 | µg/kg | X | RL |
| SO | BVBS1294 | BVBS1294S004 | N | 3 Mar 2015 | 6 - 7 | SW8270C-SIM | PAH | Acenaphthylene | 12 U | 5.9 | 12 | 2.5 | µg/kg | X | RL |
| SO | BVBS1294 | BVBS1294S004 | N | 3 Mar 2015 | 6 - 7 | SW8270C-SIM | PAH | Anthracene | 46 J | 5.9 | 12 | 2.5 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S004 | N | 3 Mar 2015 | 6 - 7 | SW8270C-SIM | PAH | Benzo(a)anthracene | 48 J | 5.9 | 12 | | µg/kg | | NC |
| SO | BVBS1294 | BVBS1294S004 | N | 3 Mar 2015 | 6 - 7 | SW8270C-SIM | PAH | Benzo(a)pyrene | 50 J | 5.9 | 12 | | µg/kg | | NC |
| SO | BVBS1294 | BVBS1294S004 | N | 3 Mar 2015 | 6 - 7 | SW8270C-SIM | PAH | Benzo(b)fluoranthene | 49 J | 5.9 | 12 | | µg/kg | | NC |
| SO | BVBS1294 | BVBS1294S004 | N | 3 Mar 2015 | 6 - 7 | SW8270C-SIM | PAH | Benzo(ghi)perylene | 80 J | 5.9 | 12 | 2.5 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S004 | N | 3 Mar 2015 | 6 - 7 | SW8270C-SIM | PAH | Benzo(k)fluoranthene | 12 J | 5.9 | 12 | | µg/kg | | NC |
| SO | BVBS1294 | BVBS1294S004 | N | 3 Mar 2015 | 6 - 7 | SW8270C-SIM | PAH | Chrysene | 33 J | 5.9 | 12 | | µg/kg | | NC |
| SO | BVBS1294 | BVBS1294S004 | N | 3 Mar 2015 | 6 - 7 | SW8270C-SIM | PAH | Dibenzo(a,h)anthracene | 12 U | 5.9 | 12 | | µg/kg | | NC |
| SO | BVBS1294 | BVBS1294S004 | N | 3 Mar 2015 | 6 - 7 | SW8270C-SIM | PAH | Fluoranthene | 210 J | 5.9 | 12 | 5.2 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S004 | N | 3 Mar 2015 | 6 - 7 | SW8270C-SIM | PAH | Fluorene | 87 J | 5.9 | 12 | 3.8 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S004 | N | 3 Mar 2015 | 6 - 7 | SW8270C-SIM | PAH | Indeno(1,2,3-cd)pyrene | 39 J | 5.9 | 12 | | µg/kg | | NC |

APPENDIX E-2

**Analytical Data 2015 Biovent Sampling**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | SL | Units | Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1294 | BVBS1294S004 | N | 3 Mar 2015 | 6 - 7 | SW8270C-SIM | PAH | Naphthalene | 12 U | 5.9 | 12 | 3.6 | µg/kg | X | RL |
| SO | BVBS1294 | BVBS1294S004 | N | 3 Mar 2015 | 6 - 7 | SW8270C-SIM | PAH | PAHTEQM | 65.13 = | | | 4.47 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S004 | N | 3 Mar 2015 | 6 - 7 | SW8270C-SIM | PAH | Phenanthrene | 71 J | 5.9 | 12 | 3.9 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S004 | N | 3 Mar 2015 | 6 - 7 | SW8270C-SIM | PAH | Pyrene | 280 J | 5.9 | 12 | 5.6 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S004 | N | 3 Mar 2015 | 6 - 7 | SW8270C-SIM | PHTH | Bis(2-ethylhexyl)phthalate | 1000 J | 12 | 24 | 61 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S004 | N | 3 Mar 2015 | 6 - 7 | SW8270C-SIM | PHTH | Butyl benzyl phthalate | 24 U | 12 | 24 | 100 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S004 | N | 3 Mar 2015 | 6 - 7 | SW8270C-SIM | PHTH | Diethyl phthalate | 24 U | 12 | 24 | 27 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S004 | N | 3 Mar 2015 | 6 - 7 | SW8270C-SIM | PHTH | Dimethyl phthalate | 24 U | 12 | 24 | 27 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S004 | N | 3 Mar 2015 | 6 - 7 | SW8270C-SIM | PHTH | Di-n-butyl phthalate | 24 U | 12 | 24 | 27 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S004 | N | 3 Mar 2015 | 6 - 7 | SW8270C-SIM | PHTH | Di-n-octyl phthalate | 46 J | 12 | 24 | 27 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S004 | N | 3 Mar 2015 | 6 - 7 | SW8260B | SVOC | Diisopropyl ether | 0.98 UJ | 0.98 | 9.8 | 10 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S004 | N | 3 Mar 2015 | 6 - 7 | SW8270C-SIM | SVOC | n-Nitrosodimethylamine | 24 U | 12 | 24 | 10 | µg/kg | X | RL |
| SO | BVBS1294 | BVBS1294S004 | N | 3 Mar 2015 | 6 - 7 | SW8260B | SVOC | tert-Amyl methyl ether | 0.98 UJ | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S004 | N | 3 Mar 2015 | 6 - 7 | SW8260B | SVOC | tert-Butyl ethyl ether | 0.98 UJ | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S004 | N | 3 Mar 2015 | 6 - 7 | SW8260B | VOC | 1,1,1,2-Tetrachloroethane | 0.98 UJ | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S004 | N | 3 Mar 2015 | 6 - 7 | SW8260B | VOC | 1,1,1-Trichloroethane | 0.98 UJ | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S004 | N | 3 Mar 2015 | 6 - 7 | SW8260B | VOC | 1,1,2,2-Tetrachloroethane | 0.98 UJ | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S004 | N | 3 Mar 2015 | 6 - 7 | SW8260B | VOC | 1,1,2-Trichloro-1,2,2-trifluoroethane | 2 UJ | 2 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S004 | N | 3 Mar 2015 | 6 - 7 | SW8260B | VOC | 1,1,2-Trichloroethane | 0.98 UJ | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S004 | N | 3 Mar 2015 | 6 - 7 | SW8260B | VOC | 1,1-Dichloroethane | 0.98 UJ | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S004 | N | 3 Mar 2015 | 6 - 7 | SW8260B | VOC | 1,1-Dichloroethene | 0.98 UJ | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S004 | N | 3 Mar 2015 | 6 - 7 | SW8260B | VOC | 1,1-Dichloropropene | 0.98 UJ | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S004 | N | 3 Mar 2015 | 6 - 7 | SW8260B | VOC | 1,2,3-Trichlorobenzene | 2 UJ | 2 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S004 | N | 3 Mar 2015 | 6 - 7 | SW8260B | VOC | 1,2,3-Trichloropropane | 2 UJ | 2 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S004 | N | 3 Mar 2015 | 6 - 7 | SW8260B | VOC | 1,2,4-Trichlorobenzene | 2 UJ | 2 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S004 | N | 3 Mar 2015 | 6 - 7 | SW8260B | VOC | 1,2,4-Trimethylbenzene | 4.5 J | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S004 | N | 3 Mar 2015 | 6 - 7 | SW8260B | VOC | 1,2-Dibromo-3-chloropropane | 2 UJ | 2 | 9.8 | 10 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S004 | N | 3 Mar 2015 | 6 - 7 | SW8260B | VOC | 1,2-Dibromoethane (EDB) | 0.98 UJ | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S004 | N | 3 Mar 2015 | 6 - 7 | SW8260B | VOC | 1,2-Dichlorobenzene | 0.98 UJ | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S004 | N | 3 Mar 2015 | 6 - 7 | SW8260B | VOC | 1,2-Dichloroethane | 0.98 UJ | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S004 | N | 3 Mar 2015 | 6 - 7 | SW8260B | VOC | 1,2-Dichloropropane | 0.98 UJ | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S004 | N | 3 Mar 2015 | 6 - 7 | SW8260B | VOC | 1,3,5-Trimethylbenzene | 2.6 J | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S004 | N | 3 Mar 2015 | 6 - 7 | SW8260B | VOC | 1,3-Dichlorobenzene | 0.98 UJ | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S004 | N | 3 Mar 2015 | 6 - 7 | SW8260B | VOC | 1,3-Dichloropropane | 0.98 UJ | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S004 | N | 3 Mar 2015 | 6 - 7 | SW8260B | VOC | 1,4-Dichlorobenzene | 0.98 UJ | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S004 | N | 3 Mar 2015 | 6 - 7 | SW8260B | VOC | 2,2-Dichloropropane | 2 UJ | 2 | 4.9 | 5 | µg/kg | | N |

APPENDIX E-2

**Analytical Data 2015 Biovent Sampling**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | SL | Units | Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1294 | BVBS1294S004 | N | 3 Mar 2015 | 6 - 7 | SW8260B | VOC | 2-Butanone (MEK) | 4.9 UJ | 4.9 | 20 | 20 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S004 | N | 3 Mar 2015 | 6 - 7 | SW8260B | VOC | 2-Chloro-1,1,1-trifluoroethane | 2 UJ | 2 | 9.8 | 10 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S004 | N | 3 Mar 2015 | 6 - 7 | SW8260B | VOC | 2-Chloroethyl vinyl ether | 2 UJ | 2 | 9.8 | 10 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S004 | N | 3 Mar 2015 | 6 - 7 | SW8260B | VOC | 2-Chlorotoluene | 0.98 UJ | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S004 | N | 3 Mar 2015 | 6 - 7 | SW8260B | VOC | 2-Hexanone | 4.9 UJ | 4.9 | 9.8 | 10 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S004 | N | 3 Mar 2015 | 6 - 7 | SW8260B | VOC | 4-Chlorotoluene | 0.98 UJ | 0.98 | 9.8 | 10 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S004 | N | 3 Mar 2015 | 6 - 7 | SW8260B | VOC | 4-Methyl-2-pentanone (MIBK) | 4.9 UJ | 4.9 | 9.8 | 10 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S004 | N | 3 Mar 2015 | 6 - 7 | SW8260B | VOC | Acetone | 16 J | 4.9 | 20 | 20 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S004 | N | 3 Mar 2015 | 6 - 7 | SW8260B | VOC | Benzene | 0.98 UJ | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S004 | N | 3 Mar 2015 | 6 - 7 | SW8260B | VOC | Bromobenzene | 0.98 UJ | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S004 | N | 3 Mar 2015 | 6 - 7 | SW8260B | VOC | Bromochloromethane | 0.98 UJ | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S004 | N | 3 Mar 2015 | 6 - 7 | SW8260B | VOC | Bromodichloromethane | 0.98 UJ | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S004 | N | 3 Mar 2015 | 6 - 7 | SW8260B | VOC | Bromoform | 2 UJ | 2 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S004 | N | 3 Mar 2015 | 6 - 7 | SW8260B | VOC | Bromomethane | 2 UJ | 2 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S004 | N | 3 Mar 2015 | 6 - 7 | SW8260B | VOC | Carbon tetrachloride | 0.98 UJ | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S004 | N | 3 Mar 2015 | 6 - 7 | SW8260B | VOC | Chlorobenzene | 0.98 UJ | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S004 | N | 3 Mar 2015 | 6 - 7 | SW8260B | VOC | Chloroethane | 2 UJ | 2 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S004 | N | 3 Mar 2015 | 6 - 7 | SW8260B | VOC | Chloromethane | 2 UJ | 2 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S004 | N | 3 Mar 2015 | 6 - 7 | SW8260B | VOC | Chlorotrifluoroethylene | 2 UJ | 2 | 9.8 | 10 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S004 | N | 3 Mar 2015 | 6 - 7 | SW8260B | VOC | cis-1,2-Dichloroethene | 0.98 UJ | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S004 | N | 3 Mar 2015 | 6 - 7 | SW8260B | VOC | cis-1,3-Dichloropropene | 0.98 UJ | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S004 | N | 3 Mar 2015 | 6 - 7 | SW8260B | VOC | Dibromochloromethane | 0.98 UJ | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S004 | N | 3 Mar 2015 | 6 - 7 | SW8260B | VOC | Dibromomethane | 0.98 UJ | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S004 | N | 3 Mar 2015 | 6 - 7 | SW8260B | VOC | Dichlorodifluoromethane | 2 UJ | 2 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S004 | N | 3 Mar 2015 | 6 - 7 | SW8260B | VOC | Ethylbenzene | 7.9 J | 0.98 | 4.9 | 5 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S004 | N | 3 Mar 2015 | 6 - 7 | SW8260B | VOC | Hexachlorobutadiene | 2 UJ | 2 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S004 | N | 3 Mar 2015 | 6 - 7 | SW8260B | VOC | Isopropylbenzene | 9.4 J | 0.98 | 4.9 | 5 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S004 | N | 3 Mar 2015 | 6 - 7 | SW8260B | VOC | m,p-Xylenes | 2.6 J | 2 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S004 | N | 3 Mar 2015 | 6 - 7 | SW8260B | VOC | Methylene chloride | 2 UJ | 2 | 9.8 | 10 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S004 | N | 3 Mar 2015 | 6 - 7 | SW8260B | VOC | Methyl-tert-butyl Ether (MTBE) | 0.98 UJ | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S004 | N | 3 Mar 2015 | 6 - 7 | SW8260B | VOC | n-butylbenzene | 0.98 UJ | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S004 | N | 3 Mar 2015 | 6 - 7 | SW8260B | VOC | n-Propylbenzene | 17 J | 0.98 | 4.9 | 5 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S004 | N | 3 Mar 2015 | 6 - 7 | SW8260B | VOC | o-Xylene | 5.6 J | 0.98 | 4.9 | 5 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S004 | N | 3 Mar 2015 | 6 - 7 | SW8260B | VOC | p-Isopropyltoluene | 4 J | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S004 | N | 3 Mar 2015 | 6 - 7 | SW8260B | VOC | sec-Butylbenzene | 23 J | 0.98 | 4.9 | 5 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S004 | N | 3 Mar 2015 | 6 - 7 | SW8260B | VOC | Styrene | 0.98 UJ | 0.98 | 4.9 | 5 | µg/kg | | N |

APPENDIX E-2

**Analytical Data 2015 Biovent Sampling**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | SL | Units | Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1294 | BVBS1294S004 | N | 3 Mar 2015 | 6 - 7 | SW8260B | VOC | tert-Butanol (TBA) | 9.8 UJ | 9.8 | 49 | | µg/kg | | NC |
| SO | BVBS1294 | BVBS1294S004 | N | 3 Mar 2015 | 6 - 7 | SW8260B | VOC | tert-Butylbenzene | 2.2 J | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S004 | N | 3 Mar 2015 | 6 - 7 | SW8260B | VOC | Tetrachloroethene | 0.98 UJ | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S004 | N | 3 Mar 2015 | 6 - 7 | SW8260B | VOC | Toluene | 0.98 UJ | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S004 | N | 3 Mar 2015 | 6 - 7 | SW8260B | VOC | trans-1,2-Dichloroethene | 0.98 UJ | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S004 | N | 3 Mar 2015 | 6 - 7 | SW8260B | VOC | trans-1,3-Dichloropropene | 0.98 UJ | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S004 | N | 3 Mar 2015 | 6 - 7 | SW8260B | VOC | Trichloroethene | 0.98 UJ | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S004 | N | 3 Mar 2015 | 6 - 7 | SW8260B | VOC | Trichlorofluoromethane | 2 UJ | 2 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S004 | N | 3 Mar 2015 | 6 - 7 | SW8260B | VOC | Trichloromethane (Chloroform) | 0.98 UJ | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S004 | N | 3 Mar 2015 | 6 - 7 | SW8260B | VOC | Vinyl chloride | 2 UJ | 2 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S005 | N | 10 Apr 2015 | 2 - 4 | SW9045D | GENCHEM | pH | 6.11 = | | | | pH units | | NC |
| SO | BVBS1294 | BVBS1294S005 | N | 10 Apr 2015 | 2 - 4 | M8015D | HC | Diesel Range Organics (C12-C14) | 13000 J | 2800 | 5600 | 5000 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S005 | N | 10 Apr 2015 | 2 - 4 | M8015D | HC | Diesel Range Organics (C15-C20) | 83000 J | 2800 | 5600 | 5000 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S005 | N | 10 Apr 2015 | 2 - 4 | M8015D | HC | Diesel Range Organics (C21-C30) | 23000 J | 2800 | 5600 | 5000 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S005 | N | 10 Apr 2015 | 2 - 4 | M8015D | HC | Diesel Range Organics (C8-C11) | 5600 U | 2800 | 5600 | 1000 | µg/kg | X | RL |
| SO | BVBS1294 | BVBS1294S005 | N | 10 Apr 2015 | 2 - 4 | SW8015B | HC | GRO (C4-C12) | 1000 J | 560 | 1100 | 1000 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S005 | N | 10 Apr 2015 | 2 - 4 | M8015D | HC | ORO (C31-C40) | 11000 U | 5600 | 11000 | 10000 | µg/kg | X | N |
| SO | BVBS1294 | BVBS1294S005 | N | 10 Apr 2015 | 2 - 4 | M8015D | HC | TOTAL EFH(C8-C40) | 130000 J | 2800 | 5600 | 10000 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S005 | N | 10 Apr 2015 | 2 - 4 | SW8270C-SIM | PAH | 1-Methylnaphthalene | 11 U | 5.6 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1294 | BVBS1294S005 | N | 10 Apr 2015 | 2 - 4 | SW8270C-SIM | PAH | 2-Methylnaphthalene | 11 U | 5.6 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1294 | BVBS1294S005 | N | 10 Apr 2015 | 2 - 4 | SW8270C-SIM | PAH | Acenaphthene | 11 U | 5.6 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1294 | BVBS1294S005 | N | 10 Apr 2015 | 2 - 4 | SW8270C-SIM | PAH | Acenaphthylene | 11 U | 5.6 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1294 | BVBS1294S005 | N | 10 Apr 2015 | 2 - 4 | SW8270C-SIM | PAH | Anthracene | 11 U | 5.6 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1294 | BVBS1294S005 | N | 10 Apr 2015 | 2 - 4 | SW8270C-SIM | PAH | Benzo(a)anthracene | 11 U | 5.6 | 11 | | µg/kg | | NC |
| SO | BVBS1294 | BVBS1294S005 | N | 10 Apr 2015 | 2 - 4 | SW8270C-SIM | PAH | Benzo(a)pyrene | 11 U | 5.6 | 11 | | µg/kg | | NC |
| SO | BVBS1294 | BVBS1294S005 | N | 10 Apr 2015 | 2 - 4 | SW8270C-SIM | PAH | Benzo(b)fluoranthene | 11 U | 5.6 | 11 | | µg/kg | | NC |
| SO | BVBS1294 | BVBS1294S005 | N | 10 Apr 2015 | 2 - 4 | SW8270C-SIM | PAH | Benzo(ghi)perylene | 11 U | 5.6 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1294 | BVBS1294S005 | N | 10 Apr 2015 | 2 - 4 | SW8270C-SIM | PAH | Benzo(k)fluoranthene | 11 U | 5.6 | 11 | | µg/kg | | NC |
| SO | BVBS1294 | BVBS1294S005 | N | 10 Apr 2015 | 2 - 4 | SW8270C-SIM | PAH | Chrysene | 11 U | 5.6 | 11 | | µg/kg | | NC |
| SO | BVBS1294 | BVBS1294S005 | N | 10 Apr 2015 | 2 - 4 | SW8270C-SIM | PAH | Dibenzo(a,h)anthracene | 11 U | 5.6 | 11 | | µg/kg | | NC |
| SO | BVBS1294 | BVBS1294S005 | N | 10 Apr 2015 | 2 - 4 | SW8270C-SIM | PAH | Fluoranthene | 11 U | 5.6 | 11 | 5.2 | µg/kg | X | RL |
| SO | BVBS1294 | BVBS1294S005 | N | 10 Apr 2015 | 2 - 4 | SW8270C-SIM | PAH | Fluorene | 11 U | 5.6 | 11 | 3.8 | µg/kg | X | RL |
| SO | BVBS1294 | BVBS1294S005 | N | 10 Apr 2015 | 2 - 4 | SW8270C-SIM | PAH | Indeno(1,2,3-cd)pyrene | 11 U | 5.6 | 11 | | µg/kg | | NC |
| SO | BVBS1294 | BVBS1294S005 | N | 10 Apr 2015 | 2 - 4 | SW8270C-SIM | PAH | Naphthalene | 11 U | 5.6 | 11 | 3.6 | µg/kg | X | RL |
| SO | BVBS1294 | BVBS1294S005 | N | 10 Apr 2015 | 2 - 4 | SW8270C-SIM | PAH | PAHTEQM | 0 U | | | 4.47 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S005 | N | 10 Apr 2015 | 2 - 4 | SW8270C-SIM | PAH | Phenanthrene | 11 U | 5.6 | 11 | 3.9 | µg/kg | X | RL |

APPENDIX E-2

**Analytical Data 2015 Biovent Sampling**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | SL | Units | Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1294 | BVBS1294S005 | N | 10 Apr 2015 | 2 - 4 | SW8270C-SIM | PAH | Pyrene | 11 U | 5.6 | 11 | 5.6 | µg/kg | X | N |
| SO | BVBS1294 | BVBS1294S005 | N | 10 Apr 2015 | 2 - 4 | SW8270C-SIM | PHTH | Bis(2-ethylhexyl)phthalate | 35 U | 11 | 22 | 61 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S005 | N | 10 Apr 2015 | 2 - 4 | SW8270C-SIM | PHTH | Butyl benzyl phthalate | 22 U | 11 | 22 | 100 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S005 | N | 10 Apr 2015 | 2 - 4 | SW8270C-SIM | PHTH | Diethyl phthalate | 22 U | 11 | 22 | 27 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S005 | N | 10 Apr 2015 | 2 - 4 | SW8270C-SIM | PHTH | Dimethyl phthalate | 22 U | 11 | 22 | 27 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S005 | N | 10 Apr 2015 | 2 - 4 | SW8270C-SIM | PHTH | Di-n-butyl phthalate | 22 U | 11 | 22 | 27 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S005 | N | 10 Apr 2015 | 2 - 4 | SW8270C-SIM | PHTH | Di-n-octyl phthalate | 22 U | 11 | 22 | 27 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S005 | N | 10 Apr 2015 | 2 - 4 | SW8260B | SVOC | Diisopropyl ether | 1.1 U | 1.1 | 11 | 10 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S005 | N | 10 Apr 2015 | 2 - 4 | SW8270C-SIM | SVOC | n-Nitrosodimethylamine | 22 U | 11 | 22 | 10 | µg/kg | X | RL |
| SO | BVBS1294 | BVBS1294S005 | N | 10 Apr 2015 | 2 - 4 | SW8260B | SVOC | tert-Amyl methyl ether | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S005 | N | 10 Apr 2015 | 2 - 4 | SW8260B | SVOC | tert-Butyl ethyl ether | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S005 | N | 10 Apr 2015 | 2 - 4 | SW8260B | VOC | 1,1,1,2-Tetrachloroethane | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S005 | N | 10 Apr 2015 | 2 - 4 | SW8260B | VOC | 1,1,1-Trichloroethane | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S005 | N | 10 Apr 2015 | 2 - 4 | SW8260B | VOC | 1,1,2,2-Tetrachloroethane | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S005 | N | 10 Apr 2015 | 2 - 4 | SW8260B | VOC | 1,1,2-Trichloro-1,2,2-trifluoroethane | 2.2 U | 2.2 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S005 | N | 10 Apr 2015 | 2 - 4 | SW8260B | VOC | 1,1,2-Trichloroethane | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S005 | N | 10 Apr 2015 | 2 - 4 | SW8260B | VOC | 1,1-Dichloroethane | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S005 | N | 10 Apr 2015 | 2 - 4 | SW8260B | VOC | 1,1-Dichloroethene | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S005 | N | 10 Apr 2015 | 2 - 4 | SW8260B | VOC | 1,1-Dichloropropene | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S005 | N | 10 Apr 2015 | 2 - 4 | SW8260B | VOC | 1,2,3-Trichlorobenzene | 2.2 U | 2.2 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S005 | N | 10 Apr 2015 | 2 - 4 | SW8260B | VOC | 1,2,3-Trichloropropane | 2.2 U | 2.2 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S005 | N | 10 Apr 2015 | 2 - 4 | SW8260B | VOC | 1,2,4-Trichlorobenzene | 2.2 U | 2.2 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S005 | N | 10 Apr 2015 | 2 - 4 | SW8260B | VOC | 1,2,4-Trimethylbenzene | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S005 | N | 10 Apr 2015 | 2 - 4 | SW8260B | VOC | 1,2-Dibromo-3-chloropropane | 2.2 U | 2.2 | 11 | 10 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S005 | N | 10 Apr 2015 | 2 - 4 | SW8260B | VOC | 1,2-Dibromoethane (EDB) | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S005 | N | 10 Apr 2015 | 2 - 4 | SW8260B | VOC | 1,2-Dichlorobenzene | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S005 | N | 10 Apr 2015 | 2 - 4 | SW8260B | VOC | 1,2-Dichloroethane | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S005 | N | 10 Apr 2015 | 2 - 4 | SW8260B | VOC | 1,2-Dichloropropane | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S005 | N | 10 Apr 2015 | 2 - 4 | SW8260B | VOC | 1,3,5-Trimethylbenzene | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S005 | N | 10 Apr 2015 | 2 - 4 | SW8260B | VOC | 1,3-Dichlorobenzene | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S005 | N | 10 Apr 2015 | 2 - 4 | SW8260B | VOC | 1,3-Dichloropropane | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S005 | N | 10 Apr 2015 | 2 - 4 | SW8260B | VOC | 1,4-Dichlorobenzene | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S005 | N | 10 Apr 2015 | 2 - 4 | SW8260B | VOC | 2,2-Dichloropropane | 2.2 U | 2.2 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S005 | N | 10 Apr 2015 | 2 - 4 | SW8260B | VOC | 2-Butanone (MEK) | 5.4 U | 5.4 | 22 | 20 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S005 | N | 10 Apr 2015 | 2 - 4 | SW8260B | VOC | 2-Chloro-1,1,1-trifluoroethane | 2.2 U | 2.2 | 11 | 10 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S005 | N | 10 Apr 2015 | 2 - 4 | SW8260B | VOC | 2-Chloroethyl vinyl ether | 2.2 U | 2.2 | 11 | 10 | µg/kg | | N |

APPENDIX E-2

**Analytical Data 2015 Biovent Sampling**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | SL | Units | Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1294 | BVBS1294S005 | N | 10 Apr 2015 | 2 - 4 | SW8260B | VOC | 2-Chlorotoluene | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S005 | N | 10 Apr 2015 | 2 - 4 | SW8260B | VOC | 2-Hexanone | 5.4 U | 5.4 | 11 | 10 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S005 | N | 10 Apr 2015 | 2 - 4 | SW8260B | VOC | 4-Chlorotoluene | 1.1 U | 1.1 | 11 | 10 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S005 | N | 10 Apr 2015 | 2 - 4 | SW8260B | VOC | 4-Methyl-2-pentanone (MIBK) | 5.4 U | 5.4 | 11 | 10 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S005 | N | 10 Apr 2015 | 2 - 4 | SW8260B | VOC | Acetone | 5.4 U | 5.4 | 22 | 20 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S005 | N | 10 Apr 2015 | 2 - 4 | SW8260B | VOC | Benzene | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S005 | N | 10 Apr 2015 | 2 - 4 | SW8260B | VOC | Bromobenzene | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S005 | N | 10 Apr 2015 | 2 - 4 | SW8260B | VOC | Bromochloromethane | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S005 | N | 10 Apr 2015 | 2 - 4 | SW8260B | VOC | Bromodichloromethane | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S005 | N | 10 Apr 2015 | 2 - 4 | SW8260B | VOC | Bromoform | 2.2 U | 2.2 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S005 | N | 10 Apr 2015 | 2 - 4 | SW8260B | VOC | Bromomethane | 2.2 U | 2.2 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S005 | N | 10 Apr 2015 | 2 - 4 | SW8260B | VOC | Carbon tetrachloride | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S005 | N | 10 Apr 2015 | 2 - 4 | SW8260B | VOC | Chlorobenzene | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S005 | N | 10 Apr 2015 | 2 - 4 | SW8260B | VOC | Chloroethane | 2.2 U | 2.2 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S005 | N | 10 Apr 2015 | 2 - 4 | SW8260B | VOC | Chloromethane | 2.2 U | 2.2 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S005 | N | 10 Apr 2015 | 2 - 4 | SW8260B | VOC | Chlorotrifluoroethylene | 2.2 U | 2.2 | 11 | 10 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S005 | N | 10 Apr 2015 | 2 - 4 | SW8260B | VOC | cis-1,2-Dichloroethene | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S005 | N | 10 Apr 2015 | 2 - 4 | SW8260B | VOC | cis-1,3-Dichloropropene | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S005 | N | 10 Apr 2015 | 2 - 4 | SW8260B | VOC | Dibromochloromethane | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S005 | N | 10 Apr 2015 | 2 - 4 | SW8260B | VOC | Dibromomethane | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S005 | N | 10 Apr 2015 | 2 - 4 | SW8260B | VOC | Dichlorodifluoromethane | 2.2 U | 2.2 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S005 | N | 10 Apr 2015 | 2 - 4 | SW8260B | VOC | Ethylbenzene | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S005 | N | 10 Apr 2015 | 2 - 4 | SW8260B | VOC | Hexachlorobutadiene | 2.2 U | 2.2 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S005 | N | 10 Apr 2015 | 2 - 4 | SW8260B | VOC | Isopropylbenzene | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S005 | N | 10 Apr 2015 | 2 - 4 | SW8260B | VOC | m,p-Xylenes | 2.2 U | 2.2 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S005 | N | 10 Apr 2015 | 2 - 4 | SW8260B | VOC | Methylene chloride | 2.2 U | 2.2 | 11 | 10 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S005 | N | 10 Apr 2015 | 2 - 4 | SW8260B | VOC | Methyl-tert-butyl Ether (MTBE) | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S005 | N | 10 Apr 2015 | 2 - 4 | SW8260B | VOC | n-butylbenzene | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S005 | N | 10 Apr 2015 | 2 - 4 | SW8260B | VOC | n-Propylbenzene | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S005 | N | 10 Apr 2015 | 2 - 4 | SW8260B | VOC | o-Xylene | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S005 | N | 10 Apr 2015 | 2 - 4 | SW8260B | VOC | p-Isopropyltoluene | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S005 | N | 10 Apr 2015 | 2 - 4 | SW8260B | VOC | sec-Butylbenzene | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S005 | N | 10 Apr 2015 | 2 - 4 | SW8260B | VOC | Styrene | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S005 | N | 10 Apr 2015 | 2 - 4 | SW8260B | VOC | tert-Butanol (TBA) | 11 U | 11 | 54 | | µg/kg | | NC |
| SO | BVBS1294 | BVBS1294S005 | N | 10 Apr 2015 | 2 - 4 | SW8260B | VOC | tert-Butylbenzene | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S005 | N | 10 Apr 2015 | 2 - 4 | SW8260B | VOC | Tetrachloroethene | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |

APPENDIX E-2

**Analytical Data 2015 Biovent Sampling**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | SL | Units | Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1294 | BVBS1294S005 | N | 10 Apr 2015 | 2 - 4 | SW8260B | VOC | Toluene | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S005 | N | 10 Apr 2015 | 2 - 4 | SW8260B | VOC | trans-1,2-Dichloroethene | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S005 | N | 10 Apr 2015 | 2 - 4 | SW8260B | VOC | trans-1,3-Dichloropropene | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S005 | N | 10 Apr 2015 | 2 - 4 | SW8260B | VOC | Trichloroethene | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S005 | N | 10 Apr 2015 | 2 - 4 | SW8260B | VOC | Trichlorofluoromethane | 2.2 U | 2.2 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S005 | N | 10 Apr 2015 | 2 - 4 | SW8260B | VOC | Trichloromethane (Chloroform) | 1.1 U | 1.1 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S005 | N | 10 Apr 2015 | 2 - 4 | SW8260B | VOC | Vinyl chloride | 2.2 U | 2.2 | 5.4 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D005 | FD | 10 Apr 2015 | 2 - 4 | SW9045D | GENCHEM | pH | 6.46 = | | | | pH units | | NC |
| SO | BVBS1294 | BVBS1294D005 | FD | 10 Apr 2015 | 2 - 4 | M8015D | HC | Diesel Range Organics (C12-C14) | 5100 J | 2800 | 5500 | 5000 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294D005 | FD | 10 Apr 2015 | 2 - 4 | M8015D | HC | Diesel Range Organics (C15-C20) | 31000 J | 2800 | 5500 | 5000 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294D005 | FD | 10 Apr 2015 | 2 - 4 | M8015D | HC | Diesel Range Organics (C21-C30) | 12000 = | 2800 | 5500 | 5000 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294D005 | FD | 10 Apr 2015 | 2 - 4 | M8015D | HC | Diesel Range Organics (C8-C11) | 5500 U | 2800 | 5500 | 1000 | µg/kg | X | RL |
| SO | BVBS1294 | BVBS1294D005 | FD | 10 Apr 2015 | 2 - 4 | SW8015B | HC | GRO (C4-C12) | 790 J | 510 | 1000 | 1000 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D005 | FD | 10 Apr 2015 | 2 - 4 | M8015D | HC | ORO (C31-C40) | 11000 U | 5500 | 11000 | 10000 | µg/kg | X | N |
| SO | BVBS1294 | BVBS1294D005 | FD | 10 Apr 2015 | 2 - 4 | M8015D | HC | TOTAL EFH(C8-C40) | 52000 U | 2800 | 5500 | 10000 | µg/kg | X | N |
| SO | BVBS1294 | BVBS1294D005 | FD | 10 Apr 2015 | 2 - 4 | SW8270C-SIM | PAH | 1-Methylnaphthalene | 11 U | 5.5 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1294 | BVBS1294D005 | FD | 10 Apr 2015 | 2 - 4 | SW8270C-SIM | PAH | 2-Methylnaphthalene | 11 U | 5.5 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1294 | BVBS1294D005 | FD | 10 Apr 2015 | 2 - 4 | SW8270C-SIM | PAH | Acenaphthene | 11 U | 5.5 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1294 | BVBS1294D005 | FD | 10 Apr 2015 | 2 - 4 | SW8270C-SIM | PAH | Acenaphthylene | 11 U | 5.5 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1294 | BVBS1294D005 | FD | 10 Apr 2015 | 2 - 4 | SW8270C-SIM | PAH | Anthracene | 11 U | 5.5 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1294 | BVBS1294D005 | FD | 10 Apr 2015 | 2 - 4 | SW8270C-SIM | PAH | Benzo(a)anthracene | 11 U | 5.5 | 11 | | µg/kg | | NC |
| SO | BVBS1294 | BVBS1294D005 | FD | 10 Apr 2015 | 2 - 4 | SW8270C-SIM | PAH | Benzo(a)pyrene | 11 U | 5.5 | 11 | | µg/kg | | NC |
| SO | BVBS1294 | BVBS1294D005 | FD | 10 Apr 2015 | 2 - 4 | SW8270C-SIM | PAH | Benzo(b)fluoranthene | 11 U | 5.5 | 11 | | µg/kg | | NC |
| SO | BVBS1294 | BVBS1294D005 | FD | 10 Apr 2015 | 2 - 4 | SW8270C-SIM | PAH | Benzo(ghi)perylene | 6.4 J | 5.5 | 11 | 2.5 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294D005 | FD | 10 Apr 2015 | 2 - 4 | SW8270C-SIM | PAH | Benzo(k)fluoranthene | 11 U | 5.5 | 11 | | µg/kg | | NC |
| SO | BVBS1294 | BVBS1294D005 | FD | 10 Apr 2015 | 2 - 4 | SW8270C-SIM | PAH | Chrysene | 11 U | 5.5 | 11 | | µg/kg | | NC |
| SO | BVBS1294 | BVBS1294D005 | FD | 10 Apr 2015 | 2 - 4 | SW8270C-SIM | PAH | Dibenzo(a,h)anthracene | 11 U | 5.5 | 11 | | µg/kg | | NC |
| SO | BVBS1294 | BVBS1294D005 | FD | 10 Apr 2015 | 2 - 4 | SW8270C-SIM | PAH | Fluoranthene | 11 U | 5.5 | 11 | 5.2 | µg/kg | X | RL |
| SO | BVBS1294 | BVBS1294D005 | FD | 10 Apr 2015 | 2 - 4 | SW8270C-SIM | PAH | Fluorene | 11 U | 5.5 | 11 | 3.8 | µg/kg | X | RL |
| SO | BVBS1294 | BVBS1294D005 | FD | 10 Apr 2015 | 2 - 4 | SW8270C-SIM | PAH | Indeno(1,2,3-cd)pyrene | 11 U | 5.5 | 11 | | µg/kg | | NC |
| SO | BVBS1294 | BVBS1294D005 | FD | 10 Apr 2015 | 2 - 4 | SW8270C-SIM | PAH | Naphthalene | 11 U | 5.5 | 11 | 3.6 | µg/kg | X | RL |
| SO | BVBS1294 | BVBS1294D005 | FD | 10 Apr 2015 | 2 - 4 | SW8270C-SIM | PAH | PAHTEQM | 0 U | | | 4.47 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D005 | FD | 10 Apr 2015 | 2 - 4 | SW8270C-SIM | PAH | Phenanthrene | 11 U | 5.5 | 11 | 3.9 | µg/kg | X | RL |
| SO | BVBS1294 | BVBS1294D005 | FD | 10 Apr 2015 | 2 - 4 | SW8270C-SIM | PAH | Pyrene | 11 U | 5.5 | 11 | 5.6 | µg/kg | X | N |
| SO | BVBS1294 | BVBS1294D005 | FD | 10 Apr 2015 | 2 - 4 | SW8270C-SIM | PHTH | Bis(2-ethylhexyl)phthalate | 36 U | 11 | 22 | 61 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D005 | FD | 10 Apr 2015 | 2 - 4 | SW8270C-SIM | PHTH | Butyl benzyl phthalate | 22 U | 11 | 22 | 100 | µg/kg | | N |

APPENDIX E-2

**Analytical Data 2015 Biovent Sampling**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | SL | Units | Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1294 | BVBS1294D005 | FD | 10 Apr 2015 | 2 - 4 | SW8270C-SIM | PHTH | Diethyl phthalate | 22 U | 11 | 22 | 27 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D005 | FD | 10 Apr 2015 | 2 - 4 | SW8270C-SIM | PHTH | Dimethyl phthalate | 22 U | 11 | 22 | 27 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D005 | FD | 10 Apr 2015 | 2 - 4 | SW8270C-SIM | PHTH | Di-n-butyl phthalate | 22 U | 11 | 22 | 27 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D005 | FD | 10 Apr 2015 | 2 - 4 | SW8270C-SIM | PHTH | Di-n-octyl phthalate | 22 U | 11 | 22 | 27 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D005 | FD | 10 Apr 2015 | 2 - 4 | SW8260B | SVOC | Diisopropyl ether | 1 U | 1 | 10 | 10 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D005 | FD | 10 Apr 2015 | 2 - 4 | SW8270C-SIM | SVOC | n-Nitrosodimethylamine | 22 U | 11 | 22 | 10 | µg/kg | X | RL |
| SO | BVBS1294 | BVBS1294D005 | FD | 10 Apr 2015 | 2 - 4 | SW8260B | SVOC | tert-Amyl methyl ether | 1 U | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D005 | FD | 10 Apr 2015 | 2 - 4 | SW8260B | SVOC | tert-Butyl ethyl ether | 1 U | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D005 | FD | 10 Apr 2015 | 2 - 4 | SW8260B | VOC | 1,1,1,2-Tetrachloroethane | 1 U | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D005 | FD | 10 Apr 2015 | 2 - 4 | SW8260B | VOC | 1,1,1-Trichloroethane | 1 U | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D005 | FD | 10 Apr 2015 | 2 - 4 | SW8260B | VOC | 1,1,2,2-Tetrachloroethane | 1 U | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D005 | FD | 10 Apr 2015 | 2 - 4 | SW8260B | VOC | 1,1,2-Trichloro-1,2,2-trifluoroethane | 2.1 U | 2.1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D005 | FD | 10 Apr 2015 | 2 - 4 | SW8260B | VOC | 1,1,2-Trichloroethane | 1 U | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D005 | FD | 10 Apr 2015 | 2 - 4 | SW8260B | VOC | 1,1-Dichloroethane | 1 U | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D005 | FD | 10 Apr 2015 | 2 - 4 | SW8260B | VOC | 1,1-Dichloroethene | 1 U | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D005 | FD | 10 Apr 2015 | 2 - 4 | SW8260B | VOC | 1,1-Dichloropropene | 1 U | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D005 | FD | 10 Apr 2015 | 2 - 4 | SW8260B | VOC | 1,2,3-Trichlorobenzene | 2.1 U | 2.1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D005 | FD | 10 Apr 2015 | 2 - 4 | SW8260B | VOC | 1,2,3-Trichloropropane | 2.1 U | 2.1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D005 | FD | 10 Apr 2015 | 2 - 4 | SW8260B | VOC | 1,2,4-Trichlorobenzene | 2.1 U | 2.1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D005 | FD | 10 Apr 2015 | 2 - 4 | SW8260B | VOC | 1,2,4-Trimethylbenzene | 1 U | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D005 | FD | 10 Apr 2015 | 2 - 4 | SW8260B | VOC | 1,2-Dibromo-3-chloropropane | 2.1 U | 2.1 | 10 | 10 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D005 | FD | 10 Apr 2015 | 2 - 4 | SW8260B | VOC | 1,2-Dibromoethane (EDB) | 1 U | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D005 | FD | 10 Apr 2015 | 2 - 4 | SW8260B | VOC | 1,2-Dichlorobenzene | 1 U | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D005 | FD | 10 Apr 2015 | 2 - 4 | SW8260B | VOC | 1,2-Dichloroethane | 1 U | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D005 | FD | 10 Apr 2015 | 2 - 4 | SW8260B | VOC | 1,2-Dichloropropane | 1 U | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D005 | FD | 10 Apr 2015 | 2 - 4 | SW8260B | VOC | 1,3,5-Trimethylbenzene | 1 U | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D005 | FD | 10 Apr 2015 | 2 - 4 | SW8260B | VOC | 1,3-Dichlorobenzene | 1 U | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D005 | FD | 10 Apr 2015 | 2 - 4 | SW8260B | VOC | 1,3-Dichloropropane | 1 U | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D005 | FD | 10 Apr 2015 | 2 - 4 | SW8260B | VOC | 1,4-Dichlorobenzene | 1 U | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D005 | FD | 10 Apr 2015 | 2 - 4 | SW8260B | VOC | 2,2-Dichloropropane | 2.1 U | 2.1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D005 | FD | 10 Apr 2015 | 2 - 4 | SW8260B | VOC | 2-Butanone (MEK) | 5.1 U | 5.1 | 21 | 20 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D005 | FD | 10 Apr 2015 | 2 - 4 | SW8260B | VOC | 2-Chloro-1,1,1-trifluoroethane | 2.1 U | 2.1 | 10 | 10 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D005 | FD | 10 Apr 2015 | 2 - 4 | SW8260B | VOC | 2-Chloroethyl vinyl ether | 2.1 U | 2.1 | 10 | 10 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D005 | FD | 10 Apr 2015 | 2 - 4 | SW8260B | VOC | 2-Chlorotoluene | 1 U | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D005 | FD | 10 Apr 2015 | 2 - 4 | SW8260B | VOC | 2-Hexanone | 5.1 U | 5.1 | 10 | 10 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D005 | FD | 10 Apr 2015 | 2 - 4 | SW8260B | VOC | 4-Chlorotoluene | 1 U | 1 | 10 | 10 | µg/kg | | N |

APPENDIX E-2

**Analytical Data 2015 Biovent Sampling**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | SL | Units | Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1294 | BVBS1294D005 | FD | 10 Apr 2015 | 2 - 4 | SW8260B | VOC | 4-Methyl-2-pentanone (MIBK) | 5.1 U | 5.1 | 10 | 10 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D005 | FD | 10 Apr 2015 | 2 - 4 | SW8260B | VOC | Acetone | 5.1 U | 5.1 | 21 | 20 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D005 | FD | 10 Apr 2015 | 2 - 4 | SW8260B | VOC | Benzene | 1 U | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D005 | FD | 10 Apr 2015 | 2 - 4 | SW8260B | VOC | Bromobenzene | 1 U | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D005 | FD | 10 Apr 2015 | 2 - 4 | SW8260B | VOC | Bromochloromethane | 1 U | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D005 | FD | 10 Apr 2015 | 2 - 4 | SW8260B | VOC | Bromodichloromethane | 1 U | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D005 | FD | 10 Apr 2015 | 2 - 4 | SW8260B | VOC | Bromoform | 2.1 U | 2.1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D005 | FD | 10 Apr 2015 | 2 - 4 | SW8260B | VOC | Bromomethane | 2.1 U | 2.1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D005 | FD | 10 Apr 2015 | 2 - 4 | SW8260B | VOC | Carbon tetrachloride | 1 U | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D005 | FD | 10 Apr 2015 | 2 - 4 | SW8260B | VOC | Chlorobenzene | 1 U | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D005 | FD | 10 Apr 2015 | 2 - 4 | SW8260B | VOC | Chloroethane | 2.1 U | 2.1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D005 | FD | 10 Apr 2015 | 2 - 4 | SW8260B | VOC | Chloromethane | 2.1 U | 2.1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D005 | FD | 10 Apr 2015 | 2 - 4 | SW8260B | VOC | Chlorotrifluoroethylene | 2.1 U | 2.1 | 10 | 10 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D005 | FD | 10 Apr 2015 | 2 - 4 | SW8260B | VOC | cis-1,2-Dichloroethene | 1 U | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D005 | FD | 10 Apr 2015 | 2 - 4 | SW8260B | VOC | cis-1,3-Dichloropropene | 1 U | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D005 | FD | 10 Apr 2015 | 2 - 4 | SW8260B | VOC | Dibromochloromethane | 1 U | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D005 | FD | 10 Apr 2015 | 2 - 4 | SW8260B | VOC | Dibromomethane | 1 U | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D005 | FD | 10 Apr 2015 | 2 - 4 | SW8260B | VOC | Dichlorodifluoromethane | 2.1 U | 2.1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D005 | FD | 10 Apr 2015 | 2 - 4 | SW8260B | VOC | Ethylbenzene | 1 U | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D005 | FD | 10 Apr 2015 | 2 - 4 | SW8260B | VOC | Hexachlorobutadiene | 2.1 U | 2.1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D005 | FD | 10 Apr 2015 | 2 - 4 | SW8260B | VOC | Isopropylbenzene | 1 U | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D005 | FD | 10 Apr 2015 | 2 - 4 | SW8260B | VOC | m,p-Xylenes | 2.1 U | 2.1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D005 | FD | 10 Apr 2015 | 2 - 4 | SW8260B | VOC | Methylene chloride | 2.1 U | 2.1 | 10 | 10 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D005 | FD | 10 Apr 2015 | 2 - 4 | SW8260B | VOC | Methyl-tert-butyl Ether (MTBE) | 1 U | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D005 | FD | 10 Apr 2015 | 2 - 4 | SW8260B | VOC | n-butylbenzene | 1 U | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D005 | FD | 10 Apr 2015 | 2 - 4 | SW8260B | VOC | n-Propylbenzene | 1 U | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D005 | FD | 10 Apr 2015 | 2 - 4 | SW8260B | VOC | o-Xylene | 1 U | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D005 | FD | 10 Apr 2015 | 2 - 4 | SW8260B | VOC | p-Isopropyltoluene | 1 U | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D005 | FD | 10 Apr 2015 | 2 - 4 | SW8260B | VOC | sec-Butylbenzene | 1 U | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D005 | FD | 10 Apr 2015 | 2 - 4 | SW8260B | VOC | Styrene | 1 U | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D005 | FD | 10 Apr 2015 | 2 - 4 | SW8260B | VOC | tert-Butanol (TBA) | 10 U | 10 | 51 | | µg/kg | | NC |
| SO | BVBS1294 | BVBS1294D005 | FD | 10 Apr 2015 | 2 - 4 | SW8260B | VOC | tert-Butylbenzene | 1 U | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D005 | FD | 10 Apr 2015 | 2 - 4 | SW8260B | VOC | Tetrachloroethene | 1 U | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D005 | FD | 10 Apr 2015 | 2 - 4 | SW8260B | VOC | Toluene | 1 U | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D005 | FD | 10 Apr 2015 | 2 - 4 | SW8260B | VOC | trans-1,2-Dichloroethene | 1 U | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D005 | FD | 10 Apr 2015 | 2 - 4 | SW8260B | VOC | trans-1,3-Dichloropropene | 1 U | 1 | 5.1 | 5 | µg/kg | | N |

APPENDIX E-2

**Analytical Data 2015 Biovent Sampling**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | SL | Units | Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1294 | BVBS1294D005 | FD | 10 Apr 2015 | 2 - 4 | SW8260B | VOC | Trichloroethene | 1 U | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D005 | FD | 10 Apr 2015 | 2 - 4 | SW8260B | VOC | Trichlorofluoromethane | 2.1 U | 2.1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D005 | FD | 10 Apr 2015 | 2 - 4 | SW8260B | VOC | Trichloromethane (Chloroform) | 1 U | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D005 | FD | 10 Apr 2015 | 2 - 4 | SW8260B | VOC | Vinyl chloride | 2.1 U | 2.1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S006 | N | 10 Apr 2015 | 6 - 7 | SW9045D | GENCHEM | pH | 8 = | | | | pH units | | NC |
| SO | BVBS1294 | BVBS1294S006 | N | 10 Apr 2015 | 6 - 7 | M8015D | HC | Diesel Range Organics (C12-C14) | 3500000 = | 31000 | 62000 | 5000 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S006 | N | 10 Apr 2015 | 6 - 7 | M8015D | HC | Diesel Range Organics (C15-C20) | 2000000 = | 31000 | 62000 | 5000 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S006 | N | 10 Apr 2015 | 6 - 7 | M8015D | HC | Diesel Range Organics (C21-C30) | 51000 J | 31000 | 62000 | 5000 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S006 | N | 10 Apr 2015 | 6 - 7 | M8015D | HC | Diesel Range Organics (C8-C11) | 780000 = | 31000 | 62000 | 1000 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S006 | N | 10 Apr 2015 | 6 - 7 | SW8015B | HC | GRO (C4-C12) | 2000000 = | 28000 | 56000 | 1000 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S006 | N | 10 Apr 2015 | 6 - 7 | M8015D | HC | ORO (C31-C40) | 120000 U | 62000 | 1E+05 | 10000 | µg/kg | X | RL |
| SO | BVBS1294 | BVBS1294S006 | N | 10 Apr 2015 | 6 - 7 | M8015D | HC | TOTAL EFH(C8-C40) | 6300000 = | 31000 | 62000 | 10000 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S006 | N | 10 Apr 2015 | 6 - 7 | SW8270C-SIM | PAH | 1-Methylnaphthalene | 13 = | 6.2 | 12 | 2.5 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S006 | N | 10 Apr 2015 | 6 - 7 | SW8270C-SIM | PAH | 2-Methylnaphthalene | 16 = | 6.2 | 12 | 2.5 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S006 | N | 10 Apr 2015 | 6 - 7 | SW8270C-SIM | PAH | Acenaphthene | 12 U | 6.2 | 12 | 2.5 | µg/kg | X | RL |
| SO | BVBS1294 | BVBS1294S006 | N | 10 Apr 2015 | 6 - 7 | SW8270C-SIM | PAH | Acenaphthylene | 12 U | 6.2 | 12 | 2.5 | µg/kg | X | RL |
| SO | BVBS1294 | BVBS1294S006 | N | 10 Apr 2015 | 6 - 7 | SW8270C-SIM | PAH | Anthracene | 12 U | 6.2 | 12 | 2.5 | µg/kg | X | RL |
| SO | BVBS1294 | BVBS1294S006 | N | 10 Apr 2015 | 6 - 7 | SW8270C-SIM | PAH | Benzo(a)anthracene | 12 U | 6.2 | 12 | | µg/kg | | NC |
| SO | BVBS1294 | BVBS1294S006 | N | 10 Apr 2015 | 6 - 7 | SW8270C-SIM | PAH | Benzo(a)pyrene | 12 U | 6.2 | 12 | | µg/kg | | NC |
| SO | BVBS1294 | BVBS1294S006 | N | 10 Apr 2015 | 6 - 7 | SW8270C-SIM | PAH | Benzo(b)fluoranthene | 12 U | 6.2 | 12 | | µg/kg | | NC |
| SO | BVBS1294 | BVBS1294S006 | N | 10 Apr 2015 | 6 - 7 | SW8270C-SIM | PAH | Benzo(ghi)perylene | 12 U | 6.2 | 12 | 2.5 | µg/kg | X | RL |
| SO | BVBS1294 | BVBS1294S006 | N | 10 Apr 2015 | 6 - 7 | SW8270C-SIM | PAH | Benzo(k)fluoranthene | 12 U | 6.2 | 12 | | µg/kg | | NC |
| SO | BVBS1294 | BVBS1294S006 | N | 10 Apr 2015 | 6 - 7 | SW8270C-SIM | PAH | Chrysene | 12 U | 6.2 | 12 | | µg/kg | | NC |
| SO | BVBS1294 | BVBS1294S006 | N | 10 Apr 2015 | 6 - 7 | SW8270C-SIM | PAH | Dibenzo(a,h)anthracene | 12 U | 6.2 | 12 | | µg/kg | | NC |
| SO | BVBS1294 | BVBS1294S006 | N | 10 Apr 2015 | 6 - 7 | SW8270C-SIM | PAH | Fluoranthene | 12 U | 6.2 | 12 | 5.2 | µg/kg | X | RL |
| SO | BVBS1294 | BVBS1294S006 | N | 10 Apr 2015 | 6 - 7 | SW8270C-SIM | PAH | Fluorene | 12 U | 6.2 | 12 | 3.8 | µg/kg | X | RL |
| SO | BVBS1294 | BVBS1294S006 | N | 10 Apr 2015 | 6 - 7 | SW8270C-SIM | PAH | Indeno(1,2,3-cd)pyrene | 12 U | 6.2 | 12 | | µg/kg | | NC |
| SO | BVBS1294 | BVBS1294S006 | N | 10 Apr 2015 | 6 - 7 | SW8270C-SIM | PAH | Naphthalene | 13 = | 6.2 | 12 | 3.6 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S006 | N | 10 Apr 2015 | 6 - 7 | SW8270C-SIM | PAH | PAHTEQM | 0 U | | | 4.47 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S006 | N | 10 Apr 2015 | 6 - 7 | SW8270C-SIM | PAH | Phenanthrene | 7.2 J | 6.2 | 12 | 3.9 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S006 | N | 10 Apr 2015 | 6 - 7 | SW8270C-SIM | PAH | Pyrene | 12 U | 6.2 | 12 | 5.6 | µg/kg | X | RL |
| SO | BVBS1294 | BVBS1294S006 | N | 10 Apr 2015 | 6 - 7 | SW8270C-SIM | PHTH | Bis(2-ethylhexyl)phthalate | 25 U | 12 | 25 | 61 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S006 | N | 10 Apr 2015 | 6 - 7 | SW8270C-SIM | PHTH | Butyl benzyl phthalate | 25 U | 12 | 25 | 100 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S006 | N | 10 Apr 2015 | 6 - 7 | SW8270C-SIM | PHTH | Diethyl phthalate | 25 U | 12 | 25 | 27 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S006 | N | 10 Apr 2015 | 6 - 7 | SW8270C-SIM | PHTH | Dimethyl phthalate | 25 U | 12 | 25 | 27 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S006 | N | 10 Apr 2015 | 6 - 7 | SW8270C-SIM | PHTH | Di-n-butyl phthalate | 25 U | 12 | 25 | 27 | µg/kg | | N |

APPENDIX E-2

**Analytical Data 2015 Biovent Sampling**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | SL | Units | Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1294 | BVBS1294S006 | N | 10 Apr 2015 | 6 - 7 | SW8270C-SIM | PHTH | Di-n-octyl phthalate | 25 U | 12 | 25 | 27 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S006 | N | 10 Apr 2015 | 6 - 7 | SW8260B | SVOC | Diisopropyl ether | 1 UJ | 1 | 10 | 10 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S006 | N | 10 Apr 2015 | 6 - 7 | SW8270C-SIM | SVOC | n-Nitrosodimethylamine | 25 U | 12 | 25 | 10 | µg/kg | X | RL |
| SO | BVBS1294 | BVBS1294S006 | N | 10 Apr 2015 | 6 - 7 | SW8260B | SVOC | tert-Amyl methyl ether | 1 UJ | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S006 | N | 10 Apr 2015 | 6 - 7 | SW8260B | SVOC | tert-Butyl ethyl ether | 1 UJ | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S006 | N | 10 Apr 2015 | 6 - 7 | SW8260B | VOC | 1,1,1,2-Tetrachloroethane | 1 UJ | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S006 | N | 10 Apr 2015 | 6 - 7 | SW8260B | VOC | 1,1,1-Trichloroethane | 1 UJ | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S006 | N | 10 Apr 2015 | 6 - 7 | SW8260B | VOC | 1,1,2,2-Tetrachloroethane | 1 UJ | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S006 | N | 10 Apr 2015 | 6 - 7 | SW8260B | VOC | 1,1,2-Trichloro-1,2,2-trifluoroethane | 2 UJ | 2 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S006 | N | 10 Apr 2015 | 6 - 7 | SW8260B | VOC | 1,1,2-Trichloroethane | 1 UJ | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S006 | N | 10 Apr 2015 | 6 - 7 | SW8260B | VOC | 1,1-Dichloroethane | 1 UJ | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S006 | N | 10 Apr 2015 | 6 - 7 | SW8260B | VOC | 1,1-Dichloroethene | 1 UJ | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S006 | N | 10 Apr 2015 | 6 - 7 | SW8260B | VOC | 1,1-Dichloropropene | 1 UJ | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S006 | N | 10 Apr 2015 | 6 - 7 | SW8260B | VOC | 1,2,3-Trichlorobenzene | 2 UJ | 2 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S006 | N | 10 Apr 2015 | 6 - 7 | SW8260B | VOC | 1,2,3-Trichloropropane | 2 UJ | 2 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S006 | N | 10 Apr 2015 | 6 - 7 | SW8260B | VOC | 1,2,4-Trichlorobenzene | 2 UJ | 2 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S006 | N | 10 Apr 2015 | 6 - 7 | SW8260B | VOC | 1,2,4-Trimethylbenzene | 3.2 J | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S006 | N | 10 Apr 2015 | 6 - 7 | SW8260B | VOC | 1,2-Dibromo-3-chloropropane | 2 UJ | 2 | 10 | 10 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S006 | N | 10 Apr 2015 | 6 - 7 | SW8260B | VOC | 1,2-Dibromoethane (EDB) | 1 UJ | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S006 | N | 10 Apr 2015 | 6 - 7 | SW8260B | VOC | 1,2-Dichlorobenzene | 1 UJ | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S006 | N | 10 Apr 2015 | 6 - 7 | SW8260B | VOC | 1,2-Dichloroethane | 1 UJ | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S006 | N | 10 Apr 2015 | 6 - 7 | SW8260B | VOC | 1,2-Dichloropropane | 1 UJ | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S006 | N | 10 Apr 2015 | 6 - 7 | SW8260B | VOC | 1,3,5-Trimethylbenzene | 1.4 J | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S006 | N | 10 Apr 2015 | 6 - 7 | SW8260B | VOC | 1,3-Dichlorobenzene | 1 UJ | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S006 | N | 10 Apr 2015 | 6 - 7 | SW8260B | VOC | 1,3-Dichloropropane | 1 UJ | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S006 | N | 10 Apr 2015 | 6 - 7 | SW8260B | VOC | 1,4-Dichlorobenzene | 1 UJ | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S006 | N | 10 Apr 2015 | 6 - 7 | SW8260B | VOC | 2,2-Dichloropropane | 2 UJ | 2 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S006 | N | 10 Apr 2015 | 6 - 7 | SW8260B | VOC | 2-Butanone (MEK) | 5.6 U | 5.1 | 20 | 20 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S006 | N | 10 Apr 2015 | 6 - 7 | SW8260B | VOC | 2-Chloro-1,1,1-trifluoroethane | 2 UJ | 2 | 10 | 10 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S006 | N | 10 Apr 2015 | 6 - 7 | SW8260B | VOC | 2-Chloroethyl vinyl ether | 2 UJ | 2 | 10 | 10 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S006 | N | 10 Apr 2015 | 6 - 7 | SW8260B | VOC | 2-Chlorotoluene | 1 UJ | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S006 | N | 10 Apr 2015 | 6 - 7 | SW8260B | VOC | 2-Hexanone | 5.1 UJ | 5.1 | 10 | 10 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S006 | N | 10 Apr 2015 | 6 - 7 | SW8260B | VOC | 4-Chlorotoluene | 1 UJ | 1 | 10 | 10 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S006 | N | 10 Apr 2015 | 6 - 7 | SW8260B | VOC | 4-Methyl-2-pentanone (MIBK) | 5.1 UJ | 5.1 | 10 | 10 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S006 | N | 10 Apr 2015 | 6 - 7 | SW8260B | VOC | Acetone | 23 J | 5.1 | 20 | 20 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S006 | N | 10 Apr 2015 | 6 - 7 | SW8260B | VOC | Benzene | 1 UJ | 1 | 5.1 | 5 | µg/kg | | N |

APPENDIX E-2

**Analytical Data 2015 Biovent Sampling**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | SL | Units | Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1294 | BVBS1294S006 | N | 10 Apr 2015 | 6 - 7 | SW8260B | VOC | Bromobenzene | 1 UJ | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S006 | N | 10 Apr 2015 | 6 - 7 | SW8260B | VOC | Bromochloromethane | 1 UJ | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S006 | N | 10 Apr 2015 | 6 - 7 | SW8260B | VOC | Bromodichloromethane | 1 UJ | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S006 | N | 10 Apr 2015 | 6 - 7 | SW8260B | VOC | Bromoform | 2 UJ | 2 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S006 | N | 10 Apr 2015 | 6 - 7 | SW8260B | VOC | Bromomethane | 2 UJ | 2 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S006 | N | 10 Apr 2015 | 6 - 7 | SW8260B | VOC | Carbon tetrachloride | 1 UJ | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S006 | N | 10 Apr 2015 | 6 - 7 | SW8260B | VOC | Chlorobenzene | 1 UJ | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S006 | N | 10 Apr 2015 | 6 - 7 | SW8260B | VOC | Chloroethane | 2 UJ | 2 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S006 | N | 10 Apr 2015 | 6 - 7 | SW8260B | VOC | Chloromethane | 2 UJ | 2 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S006 | N | 10 Apr 2015 | 6 - 7 | SW8260B | VOC | Chlorotrifluoroethylene | 2 UJ | 2 | 10 | 10 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S006 | N | 10 Apr 2015 | 6 - 7 | SW8260B | VOC | cis-1,2-Dichloroethene | 1 UJ | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S006 | N | 10 Apr 2015 | 6 - 7 | SW8260B | VOC | cis-1,3-Dichloropropene | 1 UJ | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S006 | N | 10 Apr 2015 | 6 - 7 | SW8260B | VOC | Dibromochloromethane | 1 UJ | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S006 | N | 10 Apr 2015 | 6 - 7 | SW8260B | VOC | Dibromomethane | 1 UJ | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S006 | N | 10 Apr 2015 | 6 - 7 | SW8260B | VOC | Dichlorodifluoromethane | 2 UJ | 2 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S006 | N | 10 Apr 2015 | 6 - 7 | SW8260B | VOC | Ethylbenzene | 15 J | 1 | 5.1 | 5 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S006 | N | 10 Apr 2015 | 6 - 7 | SW8260B | VOC | Hexachlorobutadiene | 2 UJ | 2 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S006 | N | 10 Apr 2015 | 6 - 7 | SW8260B | VOC | Isopropylbenzene | 10 J | 1 | 5.1 | 5 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S006 | N | 10 Apr 2015 | 6 - 7 | SW8260B | VOC | m,p-Xylenes | 4.3 J | 2 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S006 | N | 10 Apr 2015 | 6 - 7 | SW8260B | VOC | Methylene chloride | 2 UJ | 2 | 10 | 10 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S006 | N | 10 Apr 2015 | 6 - 7 | SW8260B | VOC | Methyl-tert-butyl Ether (MTBE) | 1 UJ | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S006 | N | 10 Apr 2015 | 6 - 7 | SW8260B | VOC | n-butylbenzene | 1 UJ | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S006 | N | 10 Apr 2015 | 6 - 7 | SW8260B | VOC | n-Propylbenzene | 19 J | 1 | 5.1 | 5 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S006 | N | 10 Apr 2015 | 6 - 7 | SW8260B | VOC | o-Xylene | 8.8 J | 1 | 5.1 | 5 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S006 | N | 10 Apr 2015 | 6 - 7 | SW8260B | VOC | p-Isopropyltoluene | 3.2 J | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S006 | N | 10 Apr 2015 | 6 - 7 | SW8260B | VOC | sec-Butylbenzene | 23 J | 1 | 5.1 | 5 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S006 | N | 10 Apr 2015 | 6 - 7 | SW8260B | VOC | Styrene | 1 UJ | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S006 | N | 10 Apr 2015 | 6 - 7 | SW8260B | VOC | tert-Butanol (TBA) | 10 UJ | 10 | 51 | | µg/kg | | NC |
| SO | BVBS1294 | BVBS1294S006 | N | 10 Apr 2015 | 6 - 7 | SW8260B | VOC | tert-Butylbenzene | 2.2 J | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S006 | N | 10 Apr 2015 | 6 - 7 | SW8260B | VOC | Tetrachloroethene | 1 UJ | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S006 | N | 10 Apr 2015 | 6 - 7 | SW8260B | VOC | Toluene | 1.8 J | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S006 | N | 10 Apr 2015 | 6 - 7 | SW8260B | VOC | trans-1,2-Dichloroethene | 1 UJ | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S006 | N | 10 Apr 2015 | 6 - 7 | SW8260B | VOC | trans-1,3-Dichloropropene | 1 UJ | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S006 | N | 10 Apr 2015 | 6 - 7 | SW8260B | VOC | Trichloroethene | 1 UJ | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S006 | N | 10 Apr 2015 | 6 - 7 | SW8260B | VOC | Trichlorofluoromethane | 2 UJ | 2 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S006 | N | 10 Apr 2015 | 6 - 7 | SW8260B | VOC | Trichloromethane (Chloroform) | 1 UJ | 1 | 5.1 | 5 | µg/kg | | N |

APPENDIX E-2

**Analytical Data 2015 Biovent Sampling**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | SL | Units | Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1294 | BVBS1294S006 | N | 10 Apr 2015 | 6 - 7 | SW8260B | VOC | Vinyl chloride | 2 UJ | 2 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S001 | N | 4 Feb 2015 | 2.5 - 4 | Walkley-Black | GENCHEM | Total Organic Carbon | 2190 = | 649 | 649 | | mg/kg | | NC |
| SO | BVBS1295 | BVBS1295S001 | N | 4 Feb 2015 | 2.5 - 4 | SW8015B | HC | Diesel Range Organics (C12-C14) | 5600 U | 2800 | 5600 | 5000 | µg/kg | X | N |
| SO | BVBS1295 | BVBS1295S001 | N | 4 Feb 2015 | 2.5 - 4 | SW8015B | HC | Diesel Range Organics (C15-C20) | 3500 J | 2800 | 5600 | 5000 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S001 | N | 4 Feb 2015 | 2.5 - 4 | SW8015B | HC | Diesel Range Organics (C21-C30) | 8400 = | 2800 | 5600 | 5000 | µg/kg | X | Y |
| SO | BVBS1295 | BVBS1295S001 | N | 4 Feb 2015 | 2.5 - 4 | SW8015B | HC | Diesel Range Organics (C8-C11) | 5600 U | 2800 | 5600 | 1000 | µg/kg | X | RL |
| SO | BVBS1295 | BVBS1295S001 | N | 4 Feb 2015 | 2.5 - 4 | SW8015B | HC | GRO (C4-C12) | 1000 U | 510 | 1000 | 1000 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S001 | N | 4 Feb 2015 | 2.5 - 4 | SW8015B | HC | ORO (C31-C40) | 11000 U | 5600 | 11000 | 10000 | µg/kg | X | N |
| SO | BVBS1295 | BVBS1295S001 | N | 4 Feb 2015 | 2.5 - 4 | SW8015B | HC | TOTAL EFH(C8-C40) | 16000 = | 2800 | 5600 | 10000 | µg/kg | X | Y |
| SO | BVBS1295 | BVBS1295S001 | N | 4 Feb 2015 | 2.5 - 4 | SW8270C-SIM | PAH | 1-Methylnaphthalene | 11 U | 5.6 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1295 | BVBS1295S001 | N | 4 Feb 2015 | 2.5 - 4 | SW8270C-SIM | PAH | 2-Methylnaphthalene | 11 U | 5.6 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1295 | BVBS1295S001 | N | 4 Feb 2015 | 2.5 - 4 | SW8270C-SIM | PAH | Acenaphthene | 11 U | 5.6 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1295 | BVBS1295S001 | N | 4 Feb 2015 | 2.5 - 4 | SW8270C-SIM | PAH | Acenaphthylene | 11 U | 5.6 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1295 | BVBS1295S001 | N | 4 Feb 2015 | 2.5 - 4 | SW8270C-SIM | PAH | Anthracene | 11 U | 5.6 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1295 | BVBS1295S001 | N | 4 Feb 2015 | 2.5 - 4 | SW8270C-SIM | PAH | Benzo(a)anthracene | 11 U | 5.6 | 11 | | µg/kg | | NC |
| SO | BVBS1295 | BVBS1295S001 | N | 4 Feb 2015 | 2.5 - 4 | SW8270C-SIM | PAH | Benzo(a)pyrene | 11 U | 5.6 | 11 | | µg/kg | | NC |
| SO | BVBS1295 | BVBS1295S001 | N | 4 Feb 2015 | 2.5 - 4 | SW8270C-SIM | PAH | Benzo(b)fluoranthene | 11 U | 5.6 | 11 | | µg/kg | | NC |
| SO | BVBS1295 | BVBS1295S001 | N | 4 Feb 2015 | 2.5 - 4 | SW8270C-SIM | PAH | Benzo(ghi)perylene | 11 U | 5.6 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1295 | BVBS1295S001 | N | 4 Feb 2015 | 2.5 - 4 | SW8270C-SIM | PAH | Benzo(k)fluoranthene | 11 U | 5.6 | 11 | | µg/kg | | NC |
| SO | BVBS1295 | BVBS1295S001 | N | 4 Feb 2015 | 2.5 - 4 | SW8270C-SIM | PAH | Chrysene | 11 U | 5.6 | 11 | | µg/kg | | NC |
| SO | BVBS1295 | BVBS1295S001 | N | 4 Feb 2015 | 2.5 - 4 | SW8270C-SIM | PAH | Dibenzo(a,h)anthracene | 11 U | 5.6 | 11 | | µg/kg | | NC |
| SO | BVBS1295 | BVBS1295S001 | N | 4 Feb 2015 | 2.5 - 4 | SW8270C-SIM | PAH | Fluoranthene | 11 U | 5.6 | 11 | 5.2 | µg/kg | X | RL |
| SO | BVBS1295 | BVBS1295S001 | N | 4 Feb 2015 | 2.5 - 4 | SW8270C-SIM | PAH | Fluorene | 11 U | 5.6 | 11 | 3.8 | µg/kg | X | RL |
| SO | BVBS1295 | BVBS1295S001 | N | 4 Feb 2015 | 2.5 - 4 | SW8270C-SIM | PAH | Indeno(1,2,3-cd)pyrene | 11 U | 5.6 | 11 | | µg/kg | | NC |
| SO | BVBS1295 | BVBS1295S001 | N | 4 Feb 2015 | 2.5 - 4 | SW8270C-SIM | PAH | Naphthalene | 11 U | 5.6 | 11 | 3.6 | µg/kg | X | RL |
| SO | BVBS1295 | BVBS1295S001 | N | 4 Feb 2015 | 2.5 - 4 | SW8270C-SIM | PAH | PAHTEQM | 0 U | | | 4.47 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S001 | N | 4 Feb 2015 | 2.5 - 4 | SW8270C-SIM | PAH | Phenanthrene | 11 U | 5.6 | 11 | 3.9 | µg/kg | X | RL |
| SO | BVBS1295 | BVBS1295S001 | N | 4 Feb 2015 | 2.5 - 4 | SW8270C-SIM | PAH | Pyrene | 11 U | 5.6 | 11 | 5.6 | µg/kg | X | N |
| SO | BVBS1295 | BVBS1295S001 | N | 4 Feb 2015 | 2.5 - 4 | SW8270C-SIM | PHTH | Bis(2-ethylhexyl)phthalate | 22 U | 11 | 22 | 61 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S001 | N | 4 Feb 2015 | 2.5 - 4 | SW8270C-SIM | PHTH | Butyl benzyl phthalate | 22 U | 11 | 22 | 100 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S001 | N | 4 Feb 2015 | 2.5 - 4 | SW8270C-SIM | PHTH | Diethyl phthalate | 22 U | 11 | 22 | 27 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S001 | N | 4 Feb 2015 | 2.5 - 4 | SW8270C-SIM | PHTH | Dimethyl phthalate | 22 U | 11 | 22 | 27 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S001 | N | 4 Feb 2015 | 2.5 - 4 | SW8270C-SIM | PHTH | Di-n-butyl phthalate | 22 U | 11 | 22 | 27 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S001 | N | 4 Feb 2015 | 2.5 - 4 | SW8270C-SIM | PHTH | Di-n-octyl phthalate | 22 U | 11 | 22 | 27 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S001 | N | 4 Feb 2015 | 2.5 - 4 | SW8260B | SVOC | Diisopropyl ether | 1 U | 1 | 10 | 10 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S001 | N | 4 Feb 2015 | 2.5 - 4 | SW8270C-SIM | SVOC | n-Nitrosodimethylamine | 22 U | 11 | 22 | 10 | µg/kg | X | RL |

APPENDIX E-2

**Analytical Data 2015 Biovent Sampling**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | SL | Units | Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1295 | BVBS1295S001 | N | 4 Feb 2015 | 2.5 - 4 | SW8260B | SVOC | tert-Amyl methyl ether | 1 U | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S001 | N | 4 Feb 2015 | 2.5 - 4 | SW8260B | SVOC | tert-Butyl ethyl ether | 1 U | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S001 | N | 4 Feb 2015 | 2.5 - 4 | SW8260B | VOC | 1,1,1,2-Tetrachloroethane | 1 U | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S001 | N | 4 Feb 2015 | 2.5 - 4 | SW8260B | VOC | 1,1,1-Trichloroethane | 1 U | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S001 | N | 4 Feb 2015 | 2.5 - 4 | SW8260B | VOC | 1,1,2,2-Tetrachloroethane | 1 U | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S001 | N | 4 Feb 2015 | 2.5 - 4 | SW8260B | VOC | 1,1,2-Trichloro-1,2,2-trifluoroethane | 2.1 U | 2.1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S001 | N | 4 Feb 2015 | 2.5 - 4 | SW8260B | VOC | 1,1,2-Trichloroethane | 1 U | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S001 | N | 4 Feb 2015 | 2.5 - 4 | SW8260B | VOC | 1,1-Dichloroethane | 1 U | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S001 | N | 4 Feb 2015 | 2.5 - 4 | SW8260B | VOC | 1,1-Dichloroethene | 1 U | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S001 | N | 4 Feb 2015 | 2.5 - 4 | SW8260B | VOC | 1,1-Dichloropropene | 1 U | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S001 | N | 4 Feb 2015 | 2.5 - 4 | SW8260B | VOC | 1,2,3-Trichlorobenzene | 2.1 U | 2.1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S001 | N | 4 Feb 2015 | 2.5 - 4 | SW8260B | VOC | 1,2,3-Trichloropropane | 2.1 U | 2.1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S001 | N | 4 Feb 2015 | 2.5 - 4 | SW8260B | VOC | 1,2,4-Trichlorobenzene | 2.1 U | 2.1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S001 | N | 4 Feb 2015 | 2.5 - 4 | SW8260B | VOC | 1,2,4-Trimethylbenzene | 1 U | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S001 | N | 4 Feb 2015 | 2.5 - 4 | SW8260B | VOC | 1,2-Dibromo-3-chloropropane | 2.1 U | 2.1 | 10 | 10 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S001 | N | 4 Feb 2015 | 2.5 - 4 | SW8260B | VOC | 1,2-Dibromoethane (EDB) | 1 U | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S001 | N | 4 Feb 2015 | 2.5 - 4 | SW8260B | VOC | 1,2-Dichlorobenzene | 1 U | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S001 | N | 4 Feb 2015 | 2.5 - 4 | SW8260B | VOC | 1,2-Dichloroethane | 1 U | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S001 | N | 4 Feb 2015 | 2.5 - 4 | SW8260B | VOC | 1,2-Dichloropropane | 1 U | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S001 | N | 4 Feb 2015 | 2.5 - 4 | SW8260B | VOC | 1,3,5-Trimethylbenzene | 1 U | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S001 | N | 4 Feb 2015 | 2.5 - 4 | SW8260B | VOC | 1,3-Dichlorobenzene | 1 U | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S001 | N | 4 Feb 2015 | 2.5 - 4 | SW8260B | VOC | 1,3-Dichloropropane | 1 U | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S001 | N | 4 Feb 2015 | 2.5 - 4 | SW8260B | VOC | 1,4-Dichlorobenzene | 1 U | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S001 | N | 4 Feb 2015 | 2.5 - 4 | SW8260B | VOC | 2,2-Dichloropropane | 2.1 U | 2.1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S001 | N | 4 Feb 2015 | 2.5 - 4 | SW8260B | VOC | 2-Butanone (MEK) | 5.2 U | 5.2 | 21 | 20 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S001 | N | 4 Feb 2015 | 2.5 - 4 | SW8260B | VOC | 2-Chloro-1,1,1-trifluoroethane | 2.1 U | 2.1 | 10 | 10 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S001 | N | 4 Feb 2015 | 2.5 - 4 | SW8260B | VOC | 2-Chloroethyl vinyl ether | 2.1 U | 2.1 | 10 | 10 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S001 | N | 4 Feb 2015 | 2.5 - 4 | SW8260B | VOC | 2-Chlorotoluene | 1 U | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S001 | N | 4 Feb 2015 | 2.5 - 4 | SW8260B | VOC | 2-Hexanone | 5.2 U | 5.2 | 10 | 10 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S001 | N | 4 Feb 2015 | 2.5 - 4 | SW8260B | VOC | 4-Chlorotoluene | 1 U | 1 | 10 | 10 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S001 | N | 4 Feb 2015 | 2.5 - 4 | SW8260B | VOC | 4-Methyl-2-pentanone (MIBK) | 5.2 U | 5.2 | 10 | 10 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S001 | N | 4 Feb 2015 | 2.5 - 4 | SW8260B | VOC | Acetone | 5.2 U | 5.2 | 21 | 20 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S001 | N | 4 Feb 2015 | 2.5 - 4 | SW8260B | VOC | Benzene | 1 U | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S001 | N | 4 Feb 2015 | 2.5 - 4 | SW8260B | VOC | Bromobenzene | 1 U | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S001 | N | 4 Feb 2015 | 2.5 - 4 | SW8260B | VOC | Bromochloromethane | 1 U | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S001 | N | 4 Feb 2015 | 2.5 - 4 | SW8260B | VOC | Bromodichloromethane | 1 U | 1 | 5.2 | 5 | µg/kg | | N |

APPENDIX E-2

**Analytical Data 2015 Biovent Sampling**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | SL | Units | Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1295 | BVBS1295S001 | N | 4 Feb 2015 | 2.5 - 4 | SW8260B | VOC | Bromoform | 2.1 U | 2.1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S001 | N | 4 Feb 2015 | 2.5 - 4 | SW8260B | VOC | Bromomethane | 2.1 U | 2.1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S001 | N | 4 Feb 2015 | 2.5 - 4 | SW8260B | VOC | Carbon tetrachloride | 1 U | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S001 | N | 4 Feb 2015 | 2.5 - 4 | SW8260B | VOC | Chlorobenzene | 1 U | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S001 | N | 4 Feb 2015 | 2.5 - 4 | SW8260B | VOC | Chloroethane | 2.1 U | 2.1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S001 | N | 4 Feb 2015 | 2.5 - 4 | SW8260B | VOC | Chloromethane | 2.1 U | 2.1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S001 | N | 4 Feb 2015 | 2.5 - 4 | SW8260B | VOC | Chlorotrifluoroethylene | 2.1 U | 2.1 | 10 | 10 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S001 | N | 4 Feb 2015 | 2.5 - 4 | SW8260B | VOC | cis-1,2-Dichloroethene | 1 U | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S001 | N | 4 Feb 2015 | 2.5 - 4 | SW8260B | VOC | cis-1,3-Dichloropropene | 1 U | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S001 | N | 4 Feb 2015 | 2.5 - 4 | SW8260B | VOC | Dibromochloromethane | 1 U | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S001 | N | 4 Feb 2015 | 2.5 - 4 | SW8260B | VOC | Dibromomethane | 1 U | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S001 | N | 4 Feb 2015 | 2.5 - 4 | SW8260B | VOC | Dichlorodifluoromethane | 2.1 U | 2.1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S001 | N | 4 Feb 2015 | 2.5 - 4 | SW8260B | VOC | Ethylbenzene | 1 U | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S001 | N | 4 Feb 2015 | 2.5 - 4 | SW8260B | VOC | Hexachlorobutadiene | 2.1 U | 2.1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S001 | N | 4 Feb 2015 | 2.5 - 4 | SW8260B | VOC | Isopropylbenzene | 1 U | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S001 | N | 4 Feb 2015 | 2.5 - 4 | SW8260B | VOC | m,p-Xylenes | 2.1 U | 2.1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S001 | N | 4 Feb 2015 | 2.5 - 4 | SW8260B | VOC | Methylene chloride | 2.1 J | 2.1 | 10 | 10 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S001 | N | 4 Feb 2015 | 2.5 - 4 | SW8260B | VOC | Methyl-tert-butyl Ether (MTBE) | 1 U | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S001 | N | 4 Feb 2015 | 2.5 - 4 | SW8260B | VOC | n-butylbenzene | 1 U | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S001 | N | 4 Feb 2015 | 2.5 - 4 | SW8260B | VOC | n-Propylbenzene | 1 U | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S001 | N | 4 Feb 2015 | 2.5 - 4 | SW8260B | VOC | o-Xylene | 1 U | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S001 | N | 4 Feb 2015 | 2.5 - 4 | SW8260B | VOC | p-Isopropyltoluene | 1 U | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S001 | N | 4 Feb 2015 | 2.5 - 4 | SW8260B | VOC | sec-Butylbenzene | 1 U | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S001 | N | 4 Feb 2015 | 2.5 - 4 | SW8260B | VOC | Styrene | 1 U | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S001 | N | 4 Feb 2015 | 2.5 - 4 | SW8260B | VOC | tert-Butanol (TBA) | 10 U | 10 | 52 | | µg/kg | | NC |
| SO | BVBS1295 | BVBS1295S001 | N | 4 Feb 2015 | 2.5 - 4 | SW8260B | VOC | tert-Butylbenzene | 1 U | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S001 | N | 4 Feb 2015 | 2.5 - 4 | SW8260B | VOC | Tetrachloroethene | 1 U | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S001 | N | 4 Feb 2015 | 2.5 - 4 | SW8260B | VOC | Toluene | 1 U | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S001 | N | 4 Feb 2015 | 2.5 - 4 | SW8260B | VOC | trans-1,2-Dichloroethene | 1 U | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S001 | N | 4 Feb 2015 | 2.5 - 4 | SW8260B | VOC | trans-1,3-Dichloropropene | 1 U | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S001 | N | 4 Feb 2015 | 2.5 - 4 | SW8260B | VOC | Trichloroethene | 1 U | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S001 | N | 4 Feb 2015 | 2.5 - 4 | SW8260B | VOC | Trichlorofluoromethane | 2.1 U | 2.1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S001 | N | 4 Feb 2015 | 2.5 - 4 | SW8260B | VOC | Trichloromethane (Chloroform) | 1 U | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S001 | N | 4 Feb 2015 | 2.5 - 4 | SW8260B | VOC | Vinyl chloride | 2.1 U | 2.1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295D001 | FD | 4 Feb 2015 | 2.5 - 4 | Walkley-Black | GENCHEM | Total Organic Carbon | 1960 = | 719 | 719 | | mg/kg | | NC |
| SO | BVBS1295 | BVBS1295D001 | FD | 4 Feb 2015 | 2.5 - 4 | SW8015B | HC | Diesel Range Organics (C12-C14) | 6200 U | 3100 | 6200 | 5000 | µg/kg | X | N |

APPENDIX E-2

**Analytical Data 2015 Biovent Sampling**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | SL | Units | Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1295 | BVBS1295D001 | FD | 4 Feb 2015 | 2.5 - 4 | SW8015B | HC | Diesel Range Organics (C15-C20) | 6200 U | 3100 | 6200 | 5000 | µg/kg | X | N |
| SO | BVBS1295 | BVBS1295D001 | FD | 4 Feb 2015 | 2.5 - 4 | SW8015B | HC | Diesel Range Organics (C21-C30) | 3700 J | 3100 | 6200 | 5000 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295D001 | FD | 4 Feb 2015 | 2.5 - 4 | SW8015B | HC | Diesel Range Organics (C8-C11) | 6200 U | 3100 | 6200 | 1000 | µg/kg | X | RL |
| SO | BVBS1295 | BVBS1295D001 | FD | 4 Feb 2015 | 2.5 - 4 | SW8015B | HC | GRO (C4-C12) | 1200 U | 580 | 1200 | 1000 | µg/kg | X | N |
| SO | BVBS1295 | BVBS1295D001 | FD | 4 Feb 2015 | 2.5 - 4 | SW8015B | HC | ORO (C31-C40) | 12000 U | 6200 | 12000 | 10000 | µg/kg | X | N |
| SO | BVBS1295 | BVBS1295D001 | FD | 4 Feb 2015 | 2.5 - 4 | SW8015B | HC | TOTAL EFH(C8-C40) | 9300 = | 3100 | 6200 | 10000 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295D001 | FD | 4 Feb 2015 | 2.5 - 4 | SW8270C-SIM | PAH | 1-Methylnaphthalene | 12 U | 6.2 | 12 | 2.5 | µg/kg | X | RL |
| SO | BVBS1295 | BVBS1295D001 | FD | 4 Feb 2015 | 2.5 - 4 | SW8270C-SIM | PAH | 2-Methylnaphthalene | 12 U | 6.2 | 12 | 2.5 | µg/kg | X | RL |
| SO | BVBS1295 | BVBS1295D001 | FD | 4 Feb 2015 | 2.5 - 4 | SW8270C-SIM | PAH | Acenaphthene | 12 U | 6.2 | 12 | 2.5 | µg/kg | X | RL |
| SO | BVBS1295 | BVBS1295D001 | FD | 4 Feb 2015 | 2.5 - 4 | SW8270C-SIM | PAH | Acenaphthylene | 12 U | 6.2 | 12 | 2.5 | µg/kg | X | RL |
| SO | BVBS1295 | BVBS1295D001 | FD | 4 Feb 2015 | 2.5 - 4 | SW8270C-SIM | PAH | Anthracene | 12 U | 6.2 | 12 | 2.5 | µg/kg | X | RL |
| SO | BVBS1295 | BVBS1295D001 | FD | 4 Feb 2015 | 2.5 - 4 | SW8270C-SIM | PAH | Benzo(a)anthracene | 12 U | 6.2 | 12 | | µg/kg | | NC |
| SO | BVBS1295 | BVBS1295D001 | FD | 4 Feb 2015 | 2.5 - 4 | SW8270C-SIM | PAH | Benzo(a)pyrene | 12 U | 6.2 | 12 | | µg/kg | | NC |
| SO | BVBS1295 | BVBS1295D001 | FD | 4 Feb 2015 | 2.5 - 4 | SW8270C-SIM | PAH | Benzo(b)fluoranthene | 12 U | 6.2 | 12 | | µg/kg | | NC |
| SO | BVBS1295 | BVBS1295D001 | FD | 4 Feb 2015 | 2.5 - 4 | SW8270C-SIM | PAH | Benzo(ghi)perylene | 12 U | 6.2 | 12 | 2.5 | µg/kg | X | RL |
| SO | BVBS1295 | BVBS1295D001 | FD | 4 Feb 2015 | 2.5 - 4 | SW8270C-SIM | PAH | Benzo(k)fluoranthene | 12 U | 6.2 | 12 | | µg/kg | | NC |
| SO | BVBS1295 | BVBS1295D001 | FD | 4 Feb 2015 | 2.5 - 4 | SW8270C-SIM | PAH | Chrysene | 12 U | 6.2 | 12 | | µg/kg | | NC |
| SO | BVBS1295 | BVBS1295D001 | FD | 4 Feb 2015 | 2.5 - 4 | SW8270C-SIM | PAH | Dibenzo(a,h)anthracene | 12 U | 6.2 | 12 | | µg/kg | | NC |
| SO | BVBS1295 | BVBS1295D001 | FD | 4 Feb 2015 | 2.5 - 4 | SW8270C-SIM | PAH | Fluoranthene | 12 U | 6.2 | 12 | 5.2 | µg/kg | X | RL |
| SO | BVBS1295 | BVBS1295D001 | FD | 4 Feb 2015 | 2.5 - 4 | SW8270C-SIM | PAH | Fluorene | 12 U | 6.2 | 12 | 3.8 | µg/kg | X | RL |
| SO | BVBS1295 | BVBS1295D001 | FD | 4 Feb 2015 | 2.5 - 4 | SW8270C-SIM | PAH | Indeno(1,2,3-cd)pyrene | 12 U | 6.2 | 12 | | µg/kg | | NC |
| SO | BVBS1295 | BVBS1295D001 | FD | 4 Feb 2015 | 2.5 - 4 | SW8270C-SIM | PAH | Naphthalene | 12 U | 6.2 | 12 | 3.6 | µg/kg | X | RL |
| SO | BVBS1295 | BVBS1295D001 | FD | 4 Feb 2015 | 2.5 - 4 | SW8270C-SIM | PAH | PAHTEQM | 0 U | | | 4.47 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295D001 | FD | 4 Feb 2015 | 2.5 - 4 | SW8270C-SIM | PAH | Phenanthrene | 12 U | 6.2 | 12 | 3.9 | µg/kg | X | RL |
| SO | BVBS1295 | BVBS1295D001 | FD | 4 Feb 2015 | 2.5 - 4 | SW8270C-SIM | PAH | Pyrene | 12 U | 6.2 | 12 | 5.6 | µg/kg | X | RL |
| SO | BVBS1295 | BVBS1295D001 | FD | 4 Feb 2015 | 2.5 - 4 | SW8270C-SIM | PHTH | Bis(2-ethylhexyl)phthalate | 25 U | 12 | 25 | 61 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295D001 | FD | 4 Feb 2015 | 2.5 - 4 | SW8270C-SIM | PHTH | Butyl benzyl phthalate | 25 U | 12 | 25 | 100 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295D001 | FD | 4 Feb 2015 | 2.5 - 4 | SW8270C-SIM | PHTH | Diethyl phthalate | 25 U | 12 | 25 | 27 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295D001 | FD | 4 Feb 2015 | 2.5 - 4 | SW8270C-SIM | PHTH | Dimethyl phthalate | 25 U | 12 | 25 | 27 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295D001 | FD | 4 Feb 2015 | 2.5 - 4 | SW8270C-SIM | PHTH | Di-n-butyl phthalate | 25 U | 12 | 25 | 27 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295D001 | FD | 4 Feb 2015 | 2.5 - 4 | SW8270C-SIM | PHTH | Di-n-octyl phthalate | 25 U | 12 | 25 | 27 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295D001 | FD | 4 Feb 2015 | 2.5 - 4 | SW8260B | SVOC | Diisopropyl ether | 1.1 U | 1.1 | 11 | 10 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295D001 | FD | 4 Feb 2015 | 2.5 - 4 | SW8270C-SIM | SVOC | n-Nitrosodimethylamine | 25 U | 12 | 25 | 10 | µg/kg | X | RL |
| SO | BVBS1295 | BVBS1295D001 | FD | 4 Feb 2015 | 2.5 - 4 | SW8260B | SVOC | tert-Amyl methyl ether | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295D001 | FD | 4 Feb 2015 | 2.5 - 4 | SW8260B | SVOC | tert-Butyl ethyl ether | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295D001 | FD | 4 Feb 2015 | 2.5 - 4 | SW8260B | VOC | 1,1,1,2-Tetrachloroethane | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |

APPENDIX E-2

**Analytical Data 2015 Biovent Sampling**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | SL | Units | Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1295 | BVBS1295D001 | FD | 4 Feb 2015 | 2.5 - 4 | SW8260B | VOC | 1,1,1-Trichloroethane | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295D001 | FD | 4 Feb 2015 | 2.5 - 4 | SW8260B | VOC | 1,1,2,2-Tetrachloroethane | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295D001 | FD | 4 Feb 2015 | 2.5 - 4 | SW8260B | VOC | 1,1,2-Trichloro-1,2,2-trifluoroethane | 2.3 U | 2.3 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295D001 | FD | 4 Feb 2015 | 2.5 - 4 | SW8260B | VOC | 1,1,2-Trichloroethane | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295D001 | FD | 4 Feb 2015 | 2.5 - 4 | SW8260B | VOC | 1,1-Dichloroethane | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295D001 | FD | 4 Feb 2015 | 2.5 - 4 | SW8260B | VOC | 1,1-Dichloroethene | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295D001 | FD | 4 Feb 2015 | 2.5 - 4 | SW8260B | VOC | 1,1-Dichloropropene | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295D001 | FD | 4 Feb 2015 | 2.5 - 4 | SW8260B | VOC | 1,2,3-Trichlorobenzene | 2.3 U | 2.3 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295D001 | FD | 4 Feb 2015 | 2.5 - 4 | SW8260B | VOC | 1,2,3-Trichloropropane | 2.3 U | 2.3 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295D001 | FD | 4 Feb 2015 | 2.5 - 4 | SW8260B | VOC | 1,2,4-Trichlorobenzene | 2.3 U | 2.3 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295D001 | FD | 4 Feb 2015 | 2.5 - 4 | SW8260B | VOC | 1,2,4-Trimethylbenzene | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295D001 | FD | 4 Feb 2015 | 2.5 - 4 | SW8260B | VOC | 1,2-Dibromo-3-chloropropane | 2.3 U | 2.3 | 11 | 10 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295D001 | FD | 4 Feb 2015 | 2.5 - 4 | SW8260B | VOC | 1,2-Dibromoethane (EDB) | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295D001 | FD | 4 Feb 2015 | 2.5 - 4 | SW8260B | VOC | 1,2-Dichlorobenzene | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295D001 | FD | 4 Feb 2015 | 2.5 - 4 | SW8260B | VOC | 1,2-Dichloroethane | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295D001 | FD | 4 Feb 2015 | 2.5 - 4 | SW8260B | VOC | 1,2-Dichloropropane | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295D001 | FD | 4 Feb 2015 | 2.5 - 4 | SW8260B | VOC | 1,3,5-Trimethylbenzene | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295D001 | FD | 4 Feb 2015 | 2.5 - 4 | SW8260B | VOC | 1,3-Dichlorobenzene | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295D001 | FD | 4 Feb 2015 | 2.5 - 4 | SW8260B | VOC | 1,3-Dichloropropane | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295D001 | FD | 4 Feb 2015 | 2.5 - 4 | SW8260B | VOC | 1,4-Dichlorobenzene | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295D001 | FD | 4 Feb 2015 | 2.5 - 4 | SW8260B | VOC | 2,2-Dichloropropane | 2.3 U | 2.3 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295D001 | FD | 4 Feb 2015 | 2.5 - 4 | SW8260B | VOC | 2-Butanone (MEK) | 5.7 U | 5.7 | 23 | 20 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295D001 | FD | 4 Feb 2015 | 2.5 - 4 | SW8260B | VOC | 2-Chloro-1,1,1-trifluoroethane | 2.3 U | 2.3 | 11 | 10 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295D001 | FD | 4 Feb 2015 | 2.5 - 4 | SW8260B | VOC | 2-Chloroethyl vinyl ether | 2.3 U | 2.3 | 11 | 10 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295D001 | FD | 4 Feb 2015 | 2.5 - 4 | SW8260B | VOC | 2-Chlorotoluene | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295D001 | FD | 4 Feb 2015 | 2.5 - 4 | SW8260B | VOC | 2-Hexanone | 5.7 U | 5.7 | 11 | 10 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295D001 | FD | 4 Feb 2015 | 2.5 - 4 | SW8260B | VOC | 4-Chlorotoluene | 1.1 U | 1.1 | 11 | 10 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295D001 | FD | 4 Feb 2015 | 2.5 - 4 | SW8260B | VOC | 4-Methyl-2-pentanone (MIBK) | 5.7 U | 5.7 | 11 | 10 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295D001 | FD | 4 Feb 2015 | 2.5 - 4 | SW8260B | VOC | Acetone | 5.7 U | 5.7 | 23 | 20 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295D001 | FD | 4 Feb 2015 | 2.5 - 4 | SW8260B | VOC | Benzene | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295D001 | FD | 4 Feb 2015 | 2.5 - 4 | SW8260B | VOC | Bromobenzene | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295D001 | FD | 4 Feb 2015 | 2.5 - 4 | SW8260B | VOC | Bromochloromethane | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295D001 | FD | 4 Feb 2015 | 2.5 - 4 | SW8260B | VOC | Bromodichloromethane | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295D001 | FD | 4 Feb 2015 | 2.5 - 4 | SW8260B | VOC | Bromoform | 2.3 U | 2.3 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295D001 | FD | 4 Feb 2015 | 2.5 - 4 | SW8260B | VOC | Bromomethane | 2.3 U | 2.3 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295D001 | FD | 4 Feb 2015 | 2.5 - 4 | SW8260B | VOC | Carbon tetrachloride | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |

APPENDIX E-2

**Analytical Data 2015 Biovent Sampling**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | SL | Units | Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1295 | BVBS1295D001 | FD | 4 Feb 2015 | 2.5 - 4 | SW8260B | VOC | Chlorobenzene | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295D001 | FD | 4 Feb 2015 | 2.5 - 4 | SW8260B | VOC | Chloroethane | 2.3 U | 2.3 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295D001 | FD | 4 Feb 2015 | 2.5 - 4 | SW8260B | VOC | Chloromethane | 2.3 U | 2.3 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295D001 | FD | 4 Feb 2015 | 2.5 - 4 | SW8260B | VOC | Chlorotrifluoroethylene | 2.3 U | 2.3 | 11 | 10 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295D001 | FD | 4 Feb 2015 | 2.5 - 4 | SW8260B | VOC | cis-1,2-Dichloroethene | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295D001 | FD | 4 Feb 2015 | 2.5 - 4 | SW8260B | VOC | cis-1,3-Dichloropropene | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295D001 | FD | 4 Feb 2015 | 2.5 - 4 | SW8260B | VOC | Dibromochloromethane | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295D001 | FD | 4 Feb 2015 | 2.5 - 4 | SW8260B | VOC | Dibromomethane | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295D001 | FD | 4 Feb 2015 | 2.5 - 4 | SW8260B | VOC | Dichlorodifluoromethane | 2.3 U | 2.3 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295D001 | FD | 4 Feb 2015 | 2.5 - 4 | SW8260B | VOC | Ethylbenzene | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295D001 | FD | 4 Feb 2015 | 2.5 - 4 | SW8260B | VOC | Hexachlorobutadiene | 2.3 U | 2.3 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295D001 | FD | 4 Feb 2015 | 2.5 - 4 | SW8260B | VOC | Isopropylbenzene | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295D001 | FD | 4 Feb 2015 | 2.5 - 4 | SW8260B | VOC | m,p-Xylenes | 2.3 U | 2.3 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295D001 | FD | 4 Feb 2015 | 2.5 - 4 | SW8260B | VOC | Methylene chloride | 2.3 U | 2.3 | 11 | 10 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295D001 | FD | 4 Feb 2015 | 2.5 - 4 | SW8260B | VOC | Methyl-tert-butyl Ether (MTBE) | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295D001 | FD | 4 Feb 2015 | 2.5 - 4 | SW8260B | VOC | n-butylbenzene | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295D001 | FD | 4 Feb 2015 | 2.5 - 4 | SW8260B | VOC | n-Propylbenzene | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295D001 | FD | 4 Feb 2015 | 2.5 - 4 | SW8260B | VOC | o-Xylene | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295D001 | FD | 4 Feb 2015 | 2.5 - 4 | SW8260B | VOC | p-Isopropyltoluene | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295D001 | FD | 4 Feb 2015 | 2.5 - 4 | SW8260B | VOC | sec-Butylbenzene | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295D001 | FD | 4 Feb 2015 | 2.5 - 4 | SW8260B | VOC | Styrene | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295D001 | FD | 4 Feb 2015 | 2.5 - 4 | SW8260B | VOC | tert-Butanol (TBA) | 11 U | 11 | 57 | | µg/kg | | NC |
| SO | BVBS1295 | BVBS1295D001 | FD | 4 Feb 2015 | 2.5 - 4 | SW8260B | VOC | tert-Butylbenzene | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295D001 | FD | 4 Feb 2015 | 2.5 - 4 | SW8260B | VOC | Tetrachloroethene | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295D001 | FD | 4 Feb 2015 | 2.5 - 4 | SW8260B | VOC | Toluene | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295D001 | FD | 4 Feb 2015 | 2.5 - 4 | SW8260B | VOC | trans-1,2-Dichloroethene | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295D001 | FD | 4 Feb 2015 | 2.5 - 4 | SW8260B | VOC | trans-1,3-Dichloropropene | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295D001 | FD | 4 Feb 2015 | 2.5 - 4 | SW8260B | VOC | Trichloroethene | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295D001 | FD | 4 Feb 2015 | 2.5 - 4 | SW8260B | VOC | Trichlorofluoromethane | 2.3 U | 2.3 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295D001 | FD | 4 Feb 2015 | 2.5 - 4 | SW8260B | VOC | Trichloromethane (Chloroform) | 1.1 U | 1.1 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295D001 | FD | 4 Feb 2015 | 2.5 - 4 | SW8260B | VOC | Vinyl chloride | 2.3 U | 2.3 | 5.7 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S002 | N | 4 Feb 2015 | 5.5 - 7 | Walkley-Black | GENCHEM | Total Organic Carbon | 18800 = | 2980 | 2980 | | mg/kg | | NC |
| SO | BVBS1295 | BVBS1295S002 | N | 4 Feb 2015 | 5.5 - 7 | SW8015B | HC | Diesel Range Organics (C12-C14) | 8000000 = | 31000 | 63000 | 5000 | µg/kg | X | Y |
| SO | BVBS1295 | BVBS1295S002 | N | 4 Feb 2015 | 5.5 - 7 | SW8015B | HC | Diesel Range Organics (C15-C20) | 4500000 = | 31000 | 63000 | 5000 | µg/kg | X | Y |
| SO | BVBS1295 | BVBS1295S002 | N | 4 Feb 2015 | 5.5 - 7 | SW8015B | HC | Diesel Range Organics (C21-C30) | 160000 = | 31000 | 63000 | 5000 | µg/kg | X | Y |
| SO | BVBS1295 | BVBS1295S002 | N | 4 Feb 2015 | 5.5 - 7 | SW8015B | HC | Diesel Range Organics (C8-C11) | 2500000 = | 31000 | 63000 | 1000 | µg/kg | X | Y |

APPENDIX E-2

**Analytical Data 2015 Biovent Sampling**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | SL | Units | Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1295 | BVBS1295S002 | N | 4 Feb 2015 | 5.5 - 7 | SW8015B | HC | GRO (C4-C12) | 1100000 = | 21000 | 41000 | 1000 | µg/kg | X | Y |
| SO | BVBS1295 | BVBS1295S002 | N | 4 Feb 2015 | 5.5 - 7 | SW8015B | HC | ORO (C31-C40) | 130000 U | 63000 | 1E+05 | 10000 | µg/kg | X | RL |
| SO | BVBS1295 | BVBS1295S002 | N | 4 Feb 2015 | 5.5 - 7 | SW8015B | HC | TOTAL EFH(C8-C40) | 15000000 = | 31000 | 63000 | 10000 | µg/kg | X | Y |
| SO | BVBS1295 | BVBS1295S002 | N | 4 Feb 2015 | 5.5 - 7 | SW8270C-SIM | PAH | 1-Methylnaphthalene | 13 U | 6.3 | 13 | 2.5 | µg/kg | X | RL |
| SO | BVBS1295 | BVBS1295S002 | N | 4 Feb 2015 | 5.5 - 7 | SW8270C-SIM | PAH | 2-Methylnaphthalene | 13 U | 6.3 | 13 | 2.5 | µg/kg | X | RL |
| SO | BVBS1295 | BVBS1295S002 | N | 4 Feb 2015 | 5.5 - 7 | SW8270C-SIM | PAH | Acenaphthene | 11 J | 6.3 | 13 | 2.5 | µg/kg | X | Y |
| SO | BVBS1295 | BVBS1295S002 | N | 4 Feb 2015 | 5.5 - 7 | SW8270C-SIM | PAH | Acenaphthylene | 13 U | 6.3 | 13 | 2.5 | µg/kg | X | RL |
| SO | BVBS1295 | BVBS1295S002 | N | 4 Feb 2015 | 5.5 - 7 | SW8270C-SIM | PAH | Anthracene | 13 U | 6.3 | 13 | 2.5 | µg/kg | X | RL |
| SO | BVBS1295 | BVBS1295S002 | N | 4 Feb 2015 | 5.5 - 7 | SW8270C-SIM | PAH | Benzo(a)anthracene | 13 U | 6.3 | 13 | | µg/kg | | NC |
| SO | BVBS1295 | BVBS1295S002 | N | 4 Feb 2015 | 5.5 - 7 | SW8270C-SIM | PAH | Benzo(a)pyrene | 13 U | 6.3 | 13 | | µg/kg | | NC |
| SO | BVBS1295 | BVBS1295S002 | N | 4 Feb 2015 | 5.5 - 7 | SW8270C-SIM | PAH | Benzo(b)fluoranthene | 13 U | 6.3 | 13 | | µg/kg | | NC |
| SO | BVBS1295 | BVBS1295S002 | N | 4 Feb 2015 | 5.5 - 7 | SW8270C-SIM | PAH | Benzo(ghi)perylene | 13 U | 6.3 | 13 | 2.5 | µg/kg | X | RL |
| SO | BVBS1295 | BVBS1295S002 | N | 4 Feb 2015 | 5.5 - 7 | SW8270C-SIM | PAH | Benzo(k)fluoranthene | 13 U | 6.3 | 13 | | µg/kg | | NC |
| SO | BVBS1295 | BVBS1295S002 | N | 4 Feb 2015 | 5.5 - 7 | SW8270C-SIM | PAH | Chrysene | 13 U | 6.3 | 13 | | µg/kg | | NC |
| SO | BVBS1295 | BVBS1295S002 | N | 4 Feb 2015 | 5.5 - 7 | SW8270C-SIM | PAH | Dibenzo(a,h)anthracene | 13 U | 6.3 | 13 | | µg/kg | | NC |
| SO | BVBS1295 | BVBS1295S002 | N | 4 Feb 2015 | 5.5 - 7 | SW8270C-SIM | PAH | Fluoranthene | 26 = | 6.3 | 13 | 5.2 | µg/kg | X | Y |
| SO | BVBS1295 | BVBS1295S002 | N | 4 Feb 2015 | 5.5 - 7 | SW8270C-SIM | PAH | Fluorene | 13 U | 6.3 | 13 | 3.8 | µg/kg | X | RL |
| SO | BVBS1295 | BVBS1295S002 | N | 4 Feb 2015 | 5.5 - 7 | SW8270C-SIM | PAH | Indeno(1,2,3-cd)pyrene | 13 U | 6.3 | 13 | | µg/kg | | NC |
| SO | BVBS1295 | BVBS1295S002 | N | 4 Feb 2015 | 5.5 - 7 | SW8270C-SIM | PAH | Naphthalene | 13 U | 6.3 | 13 | 3.6 | µg/kg | X | RL |
| SO | BVBS1295 | BVBS1295S002 | N | 4 Feb 2015 | 5.5 - 7 | SW8270C-SIM | PAH | PAHTEQM | 0 U | | | 4.47 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S002 | N | 4 Feb 2015 | 5.5 - 7 | SW8270C-SIM | PAH | Phenanthrene | 13 U | 6.3 | 13 | 3.9 | µg/kg | X | RL |
| SO | BVBS1295 | BVBS1295S002 | N | 4 Feb 2015 | 5.5 - 7 | SW8270C-SIM | PAH | Pyrene | 32 = | 6.3 | 13 | 5.6 | µg/kg | X | Y |
| SO | BVBS1295 | BVBS1295S002 | N | 4 Feb 2015 | 5.5 - 7 | SW8270C-SIM | PHTH | Bis(2-ethylhexyl)phthalate | 180 = | 13 | 25 | 61 | µg/kg | X | Y |
| SO | BVBS1295 | BVBS1295S002 | N | 4 Feb 2015 | 5.5 - 7 | SW8270C-SIM | PHTH | Butyl benzyl phthalate | 25 U | 13 | 25 | 100 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S002 | N | 4 Feb 2015 | 5.5 - 7 | SW8270C-SIM | PHTH | Diethyl phthalate | 25 U | 13 | 25 | 27 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S002 | N | 4 Feb 2015 | 5.5 - 7 | SW8270C-SIM | PHTH | Dimethyl phthalate | 25 U | 13 | 25 | 27 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S002 | N | 4 Feb 2015 | 5.5 - 7 | SW8270C-SIM | PHTH | Di-n-butyl phthalate | 25 U | 13 | 25 | 27 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S002 | N | 4 Feb 2015 | 5.5 - 7 | SW8270C-SIM | PHTH | Di-n-octyl phthalate | 25 U | 13 | 25 | 27 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S002 | N | 4 Feb 2015 | 5.5 - 7 | SW8260B | SVOC | Diisopropyl ether | 1 UJ | 1 | 10 | 10 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S002 | N | 4 Feb 2015 | 5.5 - 7 | SW8270C-SIM | SVOC | n-Nitrosodimethylamine | 25 U | 13 | 25 | 10 | µg/kg | X | RL |
| SO | BVBS1295 | BVBS1295S002 | N | 4 Feb 2015 | 5.5 - 7 | SW8260B | SVOC | tert-Amyl methyl ether | 1 UJ | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S002 | N | 4 Feb 2015 | 5.5 - 7 | SW8260B | SVOC | tert-Butyl ethyl ether | 1 UJ | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S002 | N | 4 Feb 2015 | 5.5 - 7 | SW8260B | VOC | 1,1,1,2-Tetrachloroethane | 1 UJ | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S002 | N | 4 Feb 2015 | 5.5 - 7 | SW8260B | VOC | 1,1,1-Trichloroethane | 1 UJ | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S002 | N | 4 Feb 2015 | 5.5 - 7 | SW8260B | VOC | 1,1,2,2-Tetrachloroethane | 1 UJ | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S002 | N | 4 Feb 2015 | 5.5 - 7 | SW8260B | VOC | 1,1,2-Trichloro-1,2,2-trifluoroethane | 2 UJ | 2 | 5.1 | 5 | µg/kg | | N |

APPENDIX E-2

**Analytical Data 2015 Biovent Sampling**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | SL | Units | Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1295 | BVBS1295S002 | N | 4 Feb 2015 | 5.5 - 7 | SW8260B | VOC | 1,1,2-Trichloroethane | 1 UJ | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S002 | N | 4 Feb 2015 | 5.5 - 7 | SW8260B | VOC | 1,1-Dichloroethane | 1 UJ | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S002 | N | 4 Feb 2015 | 5.5 - 7 | SW8260B | VOC | 1,1-Dichloroethene | 1 UJ | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S002 | N | 4 Feb 2015 | 5.5 - 7 | SW8260B | VOC | 1,1-Dichloropropene | 1 UJ | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S002 | N | 4 Feb 2015 | 5.5 - 7 | SW8260B | VOC | 1,2,3-Trichlorobenzene | 2 UJ | 2 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S002 | N | 4 Feb 2015 | 5.5 - 7 | SW8260B | VOC | 1,2,3-Trichloropropane | 2 UJ | 2 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S002 | N | 4 Feb 2015 | 5.5 - 7 | SW8260B | VOC | 1,2,4-Trichlorobenzene | 2 UJ | 2 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S002 | N | 4 Feb 2015 | 5.5 - 7 | SW8260B | VOC | 1,2,4-Trimethylbenzene | 5.3 J | 1 | 5.1 | 5 | µg/kg | X | Y |
| SO | BVBS1295 | BVBS1295S002 | N | 4 Feb 2015 | 5.5 - 7 | SW8260B | VOC | 1,2-Dibromo-3-chloropropane | 2 UJ | 2 | 10 | 10 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S002 | N | 4 Feb 2015 | 5.5 - 7 | SW8260B | VOC | 1,2-Dibromoethane (EDB) | 1 UJ | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S002 | N | 4 Feb 2015 | 5.5 - 7 | SW8260B | VOC | 1,2-Dichlorobenzene | 1 UJ | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S002 | N | 4 Feb 2015 | 5.5 - 7 | SW8260B | VOC | 1,2-Dichloroethane | 1 UJ | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S002 | N | 4 Feb 2015 | 5.5 - 7 | SW8260B | VOC | 1,2-Dichloropropane | 1 UJ | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S002 | N | 4 Feb 2015 | 5.5 - 7 | SW8260B | VOC | 1,3,5-Trimethylbenzene | 1 UJ | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S002 | N | 4 Feb 2015 | 5.5 - 7 | SW8260B | VOC | 1,3-Dichlorobenzene | 1 UJ | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S002 | N | 4 Feb 2015 | 5.5 - 7 | SW8260B | VOC | 1,3-Dichloropropane | 1 UJ | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S002 | N | 4 Feb 2015 | 5.5 - 7 | SW8260B | VOC | 1,4-Dichlorobenzene | 1 UJ | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S002 | N | 4 Feb 2015 | 5.5 - 7 | SW8260B | VOC | 2,2-Dichloropropane | 2 UJ | 2 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S002 | N | 4 Feb 2015 | 5.5 - 7 | SW8260B | VOC | 2-Butanone (MEK) | 5.1 UJ | 5.1 | 20 | 20 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S002 | N | 4 Feb 2015 | 5.5 - 7 | SW8260B | VOC | 2-Chloro-1,1,1-trifluoroethane | 2 UJ | 2 | 10 | 10 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S002 | N | 4 Feb 2015 | 5.5 - 7 | SW8260B | VOC | 2-Chloroethyl vinyl ether | 2 UJ | 2 | 10 | 10 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S002 | N | 4 Feb 2015 | 5.5 - 7 | SW8260B | VOC | 2-Chlorotoluene | 1 UJ | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S002 | N | 4 Feb 2015 | 5.5 - 7 | SW8260B | VOC | 2-Hexanone | 5.1 UJ | 5.1 | 10 | 10 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S002 | N | 4 Feb 2015 | 5.5 - 7 | SW8260B | VOC | 4-Chlorotoluene | 1 UJ | 1 | 10 | 10 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S002 | N | 4 Feb 2015 | 5.5 - 7 | SW8260B | VOC | 4-Methyl-2-pentanone (MIBK) | 5.1 UJ | 5.1 | 10 | 10 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S002 | N | 4 Feb 2015 | 5.5 - 7 | SW8260B | VOC | Acetone | 14 J | 5.1 | 20 | 20 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S002 | N | 4 Feb 2015 | 5.5 - 7 | SW8260B | VOC | Benzene | 1 UJ | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S002 | N | 4 Feb 2015 | 5.5 - 7 | SW8260B | VOC | Bromobenzene | 1 UJ | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S002 | N | 4 Feb 2015 | 5.5 - 7 | SW8260B | VOC | Bromochloromethane | 1 UJ | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S002 | N | 4 Feb 2015 | 5.5 - 7 | SW8260B | VOC | Bromodichloromethane | 2.4 J | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S002 | N | 4 Feb 2015 | 5.5 - 7 | SW8260B | VOC | Bromoform | 2 UJ | 2 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S002 | N | 4 Feb 2015 | 5.5 - 7 | SW8260B | VOC | Bromomethane | 2 UJ | 2 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S002 | N | 4 Feb 2015 | 5.5 - 7 | SW8260B | VOC | Carbon tetrachloride | 1 UJ | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S002 | N | 4 Feb 2015 | 5.5 - 7 | SW8260B | VOC | Chlorobenzene | 1 UJ | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S002 | N | 4 Feb 2015 | 5.5 - 7 | SW8260B | VOC | Chloroethane | 2 UJ | 2 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S002 | N | 4 Feb 2015 | 5.5 - 7 | SW8260B | VOC | Chloromethane | 2 UJ | 2 | 5.1 | 5 | µg/kg | | N |

APPENDIX E-2

**Analytical Data 2015 Biovent Sampling**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | SL | Units | Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1295 | BVBS1295S002 | N | 4 Feb 2015 | 5.5 - 7 | SW8260B | VOC | Chlorotrifluoroethylene | 2 UJ | 2 | 10 | 10 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S002 | N | 4 Feb 2015 | 5.5 - 7 | SW8260B | VOC | cis-1,2-Dichloroethene | 1 UJ | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S002 | N | 4 Feb 2015 | 5.5 - 7 | SW8260B | VOC | cis-1,3-Dichloropropene | 1 UJ | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S002 | N | 4 Feb 2015 | 5.5 - 7 | SW8260B | VOC | Dibromochloromethane | 1 UJ | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S002 | N | 4 Feb 2015 | 5.5 - 7 | SW8260B | VOC | Dibromomethane | 1 UJ | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S002 | N | 4 Feb 2015 | 5.5 - 7 | SW8260B | VOC | Dichlorodifluoromethane | 2 UJ | 2 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S002 | N | 4 Feb 2015 | 5.5 - 7 | SW8260B | VOC | Ethylbenzene | 4.4 J | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S002 | N | 4 Feb 2015 | 5.5 - 7 | SW8260B | VOC | Hexachlorobutadiene | 2 UJ | 2 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S002 | N | 4 Feb 2015 | 5.5 - 7 | SW8260B | VOC | Isopropylbenzene | 1 UJ | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S002 | N | 4 Feb 2015 | 5.5 - 7 | SW8260B | VOC | m,p-Xylenes | 2 UJ | 2 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S002 | N | 4 Feb 2015 | 5.5 - 7 | SW8260B | VOC | Methylene chloride | 2 UJ | 2 | 10 | 10 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S002 | N | 4 Feb 2015 | 5.5 - 7 | SW8260B | VOC | Methyl-tert-butyl Ether (MTBE) | 1 UJ | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S002 | N | 4 Feb 2015 | 5.5 - 7 | SW8260B | VOC | n-butylbenzene | 9 J | 1 | 5.1 | 5 | µg/kg | X | Y |
| SO | BVBS1295 | BVBS1295S002 | N | 4 Feb 2015 | 5.5 - 7 | SW8260B | VOC | n-Propylbenzene | 8 J | 1 | 5.1 | 5 | µg/kg | X | Y |
| SO | BVBS1295 | BVBS1295S002 | N | 4 Feb 2015 | 5.5 - 7 | SW8260B | VOC | o-Xylene | 2.1 J | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S002 | N | 4 Feb 2015 | 5.5 - 7 | SW8260B | VOC | p-Isopropyltoluene | 1 UJ | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S002 | N | 4 Feb 2015 | 5.5 - 7 | SW8260B | VOC | sec-Butylbenzene | 17 J | 1 | 5.1 | 5 | µg/kg | X | Y |
| SO | BVBS1295 | BVBS1295S002 | N | 4 Feb 2015 | 5.5 - 7 | SW8260B | VOC | Styrene | 1 UJ | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S002 | N | 4 Feb 2015 | 5.5 - 7 | SW8260B | VOC | tert-Butanol (TBA) | 10 UJ | 10 | 51 | | µg/kg | | NC |
| SO | BVBS1295 | BVBS1295S002 | N | 4 Feb 2015 | 5.5 - 7 | SW8260B | VOC | tert-Butylbenzene | 1.7 J | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S002 | N | 4 Feb 2015 | 5.5 - 7 | SW8260B | VOC | Tetrachloroethene | 1 UJ | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S002 | N | 4 Feb 2015 | 5.5 - 7 | SW8260B | VOC | Toluene | 1 UJ | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S002 | N | 4 Feb 2015 | 5.5 - 7 | SW8260B | VOC | trans-1,2-Dichloroethene | 1 UJ | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S002 | N | 4 Feb 2015 | 5.5 - 7 | SW8260B | VOC | trans-1,3-Dichloropropene | 1 UJ | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S002 | N | 4 Feb 2015 | 5.5 - 7 | SW8260B | VOC | Trichloroethene | 2.1 J | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S002 | N | 4 Feb 2015 | 5.5 - 7 | SW8260B | VOC | Trichlorofluoromethane | 2 UJ | 2 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S002 | N | 4 Feb 2015 | 5.5 - 7 | SW8260B | VOC | Trichloromethane (Chloroform) | 1 UJ | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S002 | N | 4 Feb 2015 | 5.5 - 7 | SW8260B | VOC | Vinyl chloride | 2 UJ | 2 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S003 | N | 3 Mar 2015 | 2.5 - 4.5 | SW9045D | GENCHEM | pH | 7.39 = | | | | pH units | | NC |
| SO | BVBS1295 | BVBS1295S003 | N | 3 Mar 2015 | 2.5 - 4.5 | SW8015B | HC | Diesel Range Organics (C12-C14) | 5800 U | 2900 | 5800 | 5000 | µg/kg | X | N |
| SO | BVBS1295 | BVBS1295S003 | N | 3 Mar 2015 | 2.5 - 4.5 | SW8015B | HC | Diesel Range Organics (C15-C20) | 9600 = | 2900 | 5800 | 5000 | µg/kg | X | Y |
| SO | BVBS1295 | BVBS1295S003 | N | 3 Mar 2015 | 2.5 - 4.5 | SW8015B | HC | Diesel Range Organics (C21-C30) | 5800 U | 2900 | 5800 | 5000 | µg/kg | X | N |
| SO | BVBS1295 | BVBS1295S003 | N | 3 Mar 2015 | 2.5 - 4.5 | SW8015B | HC | Diesel Range Organics (C8-C11) | 5800 U | 2900 | 5800 | 1000 | µg/kg | X | RL |
| SO | BVBS1295 | BVBS1295S003 | N | 3 Mar 2015 | 2.5 - 4.5 | SW8015B | HC | GRO (C4-C12) | 1100 U | 530 | 1100 | 1000 | µg/kg | X | N |
| SO | BVBS1295 | BVBS1295S003 | N | 3 Mar 2015 | 2.5 - 4.5 | SW8015B | HC | ORO (C31-C40) | 12000 U | 5800 | 12000 | 10000 | µg/kg | X | N |
| SO | BVBS1295 | BVBS1295S003 | N | 3 Mar 2015 | 2.5 - 4.5 | SW8015B | HC | TOTAL EFH(C8-C40) | 13000 = | 2900 | 5800 | 10000 | µg/kg | X | Y |

APPENDIX E-2

**Analytical Data 2015 Biovent Sampling**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | SL | Units | Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1295 | BVBS1295S003 | N | 3 Mar 2015 | 2.5 - 4.5 | SW8270C-SIM | PAH | 1-Methylnaphthalene | 12 U | 5.8 | 12 | 2.5 | µg/kg | X | RL |
| SO | BVBS1295 | BVBS1295S003 | N | 3 Mar 2015 | 2.5 - 4.5 | SW8270C-SIM | PAH | 2-Methylnaphthalene | 12 U | 5.8 | 12 | 2.5 | µg/kg | X | RL |
| SO | BVBS1295 | BVBS1295S003 | N | 3 Mar 2015 | 2.5 - 4.5 | SW8270C-SIM | PAH | Acenaphthene | 12 U | 5.8 | 12 | 2.5 | µg/kg | X | RL |
| SO | BVBS1295 | BVBS1295S003 | N | 3 Mar 2015 | 2.5 - 4.5 | SW8270C-SIM | PAH | Acenaphthylene | 12 U | 5.8 | 12 | 2.5 | µg/kg | X | RL |
| SO | BVBS1295 | BVBS1295S003 | N | 3 Mar 2015 | 2.5 - 4.5 | SW8270C-SIM | PAH | Anthracene | 12 U | 5.8 | 12 | 2.5 | µg/kg | X | RL |
| SO | BVBS1295 | BVBS1295S003 | N | 3 Mar 2015 | 2.5 - 4.5 | SW8270C-SIM | PAH | Benzo(a)anthracene | 12 U | 5.8 | 12 |  | µg/kg |  | NC |
| SO | BVBS1295 | BVBS1295S003 | N | 3 Mar 2015 | 2.5 - 4.5 | SW8270C-SIM | PAH | Benzo(a)pyrene | 12 U | 5.8 | 12 |  | µg/kg |  | NC |
| SO | BVBS1295 | BVBS1295S003 | N | 3 Mar 2015 | 2.5 - 4.5 | SW8270C-SIM | PAH | Benzo(b)fluoranthene | 12 U | 5.8 | 12 |  | µg/kg |  | NC |
| SO | BVBS1295 | BVBS1295S003 | N | 3 Mar 2015 | 2.5 - 4.5 | SW8270C-SIM | PAH | Benzo(ghi)perylene | 12 U | 5.8 | 12 | 2.5 | µg/kg | X | RL |
| SO | BVBS1295 | BVBS1295S003 | N | 3 Mar 2015 | 2.5 - 4.5 | SW8270C-SIM | PAH | Benzo(k)fluoranthene | 12 U | 5.8 | 12 |  | µg/kg |  | NC |
| SO | BVBS1295 | BVBS1295S003 | N | 3 Mar 2015 | 2.5 - 4.5 | SW8270C-SIM | PAH | Chrysene | 12 U | 5.8 | 12 |  | µg/kg |  | NC |
| SO | BVBS1295 | BVBS1295S003 | N | 3 Mar 2015 | 2.5 - 4.5 | SW8270C-SIM | PAH | Dibenzo(a,h)anthracene | 12 U | 5.8 | 12 |  | µg/kg |  | NC |
| SO | BVBS1295 | BVBS1295S003 | N | 3 Mar 2015 | 2.5 - 4.5 | SW8270C-SIM | PAH | Fluoranthene | 12 U | 5.8 | 12 | 5.2 | µg/kg | X | RL |
| SO | BVBS1295 | BVBS1295S003 | N | 3 Mar 2015 | 2.5 - 4.5 | SW8270C-SIM | PAH | Fluorene | 12 U | 5.8 | 12 | 3.8 | µg/kg | X | RL |
| SO | BVBS1295 | BVBS1295S003 | N | 3 Mar 2015 | 2.5 - 4.5 | SW8270C-SIM | PAH | Indeno(1,2,3-cd)pyrene | 12 U | 5.8 | 12 |  | µg/kg |  | NC |
| SO | BVBS1295 | BVBS1295S003 | N | 3 Mar 2015 | 2.5 - 4.5 | SW8270C-SIM | PAH | Naphthalene | 12 U | 5.8 | 12 | 3.6 | µg/kg | X | RL |
| SO | BVBS1295 | BVBS1295S003 | N | 3 Mar 2015 | 2.5 - 4.5 | SW8270C-SIM | PAH | PAHTEQM | 0 U |  |  | 4.47 | µg/kg |  | N |
| SO | BVBS1295 | BVBS1295S003 | N | 3 Mar 2015 | 2.5 - 4.5 | SW8270C-SIM | PAH | Phenanthrene | 12 U | 5.8 | 12 | 3.9 | µg/kg | X | RL |
| SO | BVBS1295 | BVBS1295S003 | N | 3 Mar 2015 | 2.5 - 4.5 | SW8270C-SIM | PAH | Pyrene | 12 U | 5.8 | 12 | 5.6 | µg/kg | X | RL |
| SO | BVBS1295 | BVBS1295S003 | N | 3 Mar 2015 | 2.5 - 4.5 | SW8270C-SIM | PHTH | Bis(2-ethylhexyl)phthalate | 23 U | 12 | 23 | 61 | µg/kg |  | N |
| SO | BVBS1295 | BVBS1295S003 | N | 3 Mar 2015 | 2.5 - 4.5 | SW8270C-SIM | PHTH | Butyl benzyl phthalate | 23 U | 12 | 23 | 100 | µg/kg |  | N |
| SO | BVBS1295 | BVBS1295S003 | N | 3 Mar 2015 | 2.5 - 4.5 | SW8270C-SIM | PHTH | Diethyl phthalate | 23 U | 12 | 23 | 27 | µg/kg |  | N |
| SO | BVBS1295 | BVBS1295S003 | N | 3 Mar 2015 | 2.5 - 4.5 | SW8270C-SIM | PHTH | Dimethyl phthalate | 23 U | 12 | 23 | 27 | µg/kg |  | N |
| SO | BVBS1295 | BVBS1295S003 | N | 3 Mar 2015 | 2.5 - 4.5 | SW8270C-SIM | PHTH | Di-n-butyl phthalate | 23 U | 12 | 23 | 27 | µg/kg |  | N |
| SO | BVBS1295 | BVBS1295S003 | N | 3 Mar 2015 | 2.5 - 4.5 | SW8270C-SIM | PHTH | Di-n-octyl phthalate | 23 U | 12 | 23 | 27 | µg/kg |  | N |
| SO | BVBS1295 | BVBS1295S003 | N | 3 Mar 2015 | 2.5 - 4.5 | SW8260B | SVOC | Diisopropyl ether | 1.1 U | 1.1 | 11 | 10 | µg/kg |  | N |
| SO | BVBS1295 | BVBS1295S003 | N | 3 Mar 2015 | 2.5 - 4.5 | SW8270C-SIM | SVOC | n-Nitrosodimethylamine | 23 U | 12 | 23 | 10 | µg/kg | X | RL |
| SO | BVBS1295 | BVBS1295S003 | N | 3 Mar 2015 | 2.5 - 4.5 | SW8260B | SVOC | tert-Amyl methyl ether | 1.1 U | 1.1 | 5.3 | 5 | µg/kg |  | N |
| SO | BVBS1295 | BVBS1295S003 | N | 3 Mar 2015 | 2.5 - 4.5 | SW8260B | SVOC | tert-Butyl ethyl ether | 1.1 U | 1.1 | 5.3 | 5 | µg/kg |  | N |
| SO | BVBS1295 | BVBS1295S003 | N | 3 Mar 2015 | 2.5 - 4.5 | SW8260B | VOC | 1,1,1,2-Tetrachloroethane | 1.1 U | 1.1 | 5.3 | 5 | µg/kg |  | N |
| SO | BVBS1295 | BVBS1295S003 | N | 3 Mar 2015 | 2.5 - 4.5 | SW8260B | VOC | 1,1,1-Trichloroethane | 1.1 U | 1.1 | 5.3 | 5 | µg/kg |  | N |
| SO | BVBS1295 | BVBS1295S003 | N | 3 Mar 2015 | 2.5 - 4.5 | SW8260B | VOC | 1,1,2,2-Tetrachloroethane | 1.1 U | 1.1 | 5.3 | 5 | µg/kg |  | N |
| SO | BVBS1295 | BVBS1295S003 | N | 3 Mar 2015 | 2.5 - 4.5 | SW8260B | VOC | 1,1,2-Trichloro-1,2,2-trifluoroethane | 2.1 U | 2.1 | 5.3 | 5 | µg/kg |  | N |
| SO | BVBS1295 | BVBS1295S003 | N | 3 Mar 2015 | 2.5 - 4.5 | SW8260B | VOC | 1,1,2-Trichloroethane | 1.1 U | 1.1 | 5.3 | 5 | µg/kg |  | N |
| SO | BVBS1295 | BVBS1295S003 | N | 3 Mar 2015 | 2.5 - 4.5 | SW8260B | VOC | 1,1-Dichloroethane | 1.1 U | 1.1 | 5.3 | 5 | µg/kg |  | N |
| SO | BVBS1295 | BVBS1295S003 | N | 3 Mar 2015 | 2.5 - 4.5 | SW8260B | VOC | 1,1-Dichloroethene | 1.1 U | 1.1 | 5.3 | 5 | µg/kg |  | N |

APPENDIX E-2

**Analytical Data 2015 Biovent Sampling**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | SL | Units | Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1295 | BVBS1295S003 | N | 3 Mar 2015 | 2.5 - 4.5 | SW8260B | VOC | 1,1-Dichloropropene | 1.1 U | 1.1 | 5.3 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S003 | N | 3 Mar 2015 | 2.5 - 4.5 | SW8260B | VOC | 1,2,3-Trichlorobenzene | 2.1 U | 2.1 | 5.3 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S003 | N | 3 Mar 2015 | 2.5 - 4.5 | SW8260B | VOC | 1,2,3-Trichloropropane | 2.1 U | 2.1 | 5.3 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S003 | N | 3 Mar 2015 | 2.5 - 4.5 | SW8260B | VOC | 1,2,4-Trichlorobenzene | 2.1 U | 2.1 | 5.3 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S003 | N | 3 Mar 2015 | 2.5 - 4.5 | SW8260B | VOC | 1,2,4-Trimethylbenzene | 1.1 U | 1.1 | 5.3 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S003 | N | 3 Mar 2015 | 2.5 - 4.5 | SW8260B | VOC | 1,2-Dibromo-3-chloropropane | 2.1 U | 2.1 | 11 | 10 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S003 | N | 3 Mar 2015 | 2.5 - 4.5 | SW8260B | VOC | 1,2-Dibromoethane (EDB) | 1.1 U | 1.1 | 5.3 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S003 | N | 3 Mar 2015 | 2.5 - 4.5 | SW8260B | VOC | 1,2-Dichlorobenzene | 1.1 U | 1.1 | 5.3 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S003 | N | 3 Mar 2015 | 2.5 - 4.5 | SW8260B | VOC | 1,2-Dichloroethane | 1.1 U | 1.1 | 5.3 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S003 | N | 3 Mar 2015 | 2.5 - 4.5 | SW8260B | VOC | 1,2-Dichloropropane | 1.1 U | 1.1 | 5.3 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S003 | N | 3 Mar 2015 | 2.5 - 4.5 | SW8260B | VOC | 1,3,5-Trimethylbenzene | 1.1 U | 1.1 | 5.3 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S003 | N | 3 Mar 2015 | 2.5 - 4.5 | SW8260B | VOC | 1,3-Dichlorobenzene | 1.1 U | 1.1 | 5.3 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S003 | N | 3 Mar 2015 | 2.5 - 4.5 | SW8260B | VOC | 1,3-Dichloropropane | 1.1 U | 1.1 | 5.3 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S003 | N | 3 Mar 2015 | 2.5 - 4.5 | SW8260B | VOC | 1,4-Dichlorobenzene | 1.1 U | 1.1 | 5.3 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S003 | N | 3 Mar 2015 | 2.5 - 4.5 | SW8260B | VOC | 2,2-Dichloropropane | 2.1 U | 2.1 | 5.3 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S003 | N | 3 Mar 2015 | 2.5 - 4.5 | SW8260B | VOC | 2-Butanone (MEK) | 5.3 U | 5.3 | 21 | 20 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S003 | N | 3 Mar 2015 | 2.5 - 4.5 | SW8260B | VOC | 2-Chloro-1,1,1-trifluoroethane | 2.1 U | 2.1 | 11 | 10 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S003 | N | 3 Mar 2015 | 2.5 - 4.5 | SW8260B | VOC | 2-Chloroethyl vinyl ether | 2.1 U | 2.1 | 11 | 10 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S003 | N | 3 Mar 2015 | 2.5 - 4.5 | SW8260B | VOC | 2-Chlorotoluene | 1.1 U | 1.1 | 5.3 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S003 | N | 3 Mar 2015 | 2.5 - 4.5 | SW8260B | VOC | 2-Hexanone | 5.3 U | 5.3 | 11 | 10 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S003 | N | 3 Mar 2015 | 2.5 - 4.5 | SW8260B | VOC | 4-Chlorotoluene | 1.1 U | 1.1 | 11 | 10 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S003 | N | 3 Mar 2015 | 2.5 - 4.5 | SW8260B | VOC | 4-Methyl-2-pentanone (MIBK) | 5.3 U | 5.3 | 11 | 10 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S003 | N | 3 Mar 2015 | 2.5 - 4.5 | SW8260B | VOC | Acetone | 5.3 U | 5.3 | 21 | 20 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S003 | N | 3 Mar 2015 | 2.5 - 4.5 | SW8260B | VOC | Benzene | 1.1 U | 1.1 | 5.3 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S003 | N | 3 Mar 2015 | 2.5 - 4.5 | SW8260B | VOC | Bromobenzene | 1.1 U | 1.1 | 5.3 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S003 | N | 3 Mar 2015 | 2.5 - 4.5 | SW8260B | VOC | Bromochloromethane | 1.1 U | 1.1 | 5.3 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S003 | N | 3 Mar 2015 | 2.5 - 4.5 | SW8260B | VOC | Bromodichloromethane | 1.1 U | 1.1 | 5.3 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S003 | N | 3 Mar 2015 | 2.5 - 4.5 | SW8260B | VOC | Bromoform | 2.1 U | 2.1 | 5.3 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S003 | N | 3 Mar 2015 | 2.5 - 4.5 | SW8260B | VOC | Bromomethane | 2.1 U | 2.1 | 5.3 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S003 | N | 3 Mar 2015 | 2.5 - 4.5 | SW8260B | VOC | Carbon tetrachloride | 1.1 U | 1.1 | 5.3 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S003 | N | 3 Mar 2015 | 2.5 - 4.5 | SW8260B | VOC | Chlorobenzene | 1.1 U | 1.1 | 5.3 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S003 | N | 3 Mar 2015 | 2.5 - 4.5 | SW8260B | VOC | Chloroethane | 2.1 U | 2.1 | 5.3 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S003 | N | 3 Mar 2015 | 2.5 - 4.5 | SW8260B | VOC | Chloromethane | 2.1 U | 2.1 | 5.3 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S003 | N | 3 Mar 2015 | 2.5 - 4.5 | SW8260B | VOC | Chlorotrifluoroethylene | 2.1 U | 2.1 | 11 | 10 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S003 | N | 3 Mar 2015 | 2.5 - 4.5 | SW8260B | VOC | cis-1,2-Dichloroethene | 1.1 U | 1.1 | 5.3 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S003 | N | 3 Mar 2015 | 2.5 - 4.5 | SW8260B | VOC | cis-1,3-Dichloropropene | 1.1 U | 1.1 | 5.3 | 5 | µg/kg | | N |

APPENDIX E-2

**Analytical Data 2015 Biovent Sampling**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | SL | Units | Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1295 | BVBS1295S003 | N | 3 Mar 2015 | 2.5 - 4.5 | SW8260B | VOC | Dibromochloromethane | 1.1 U | 1.1 | 5.3 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S003 | N | 3 Mar 2015 | 2.5 - 4.5 | SW8260B | VOC | Dibromomethane | 1.1 U | 1.1 | 5.3 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S003 | N | 3 Mar 2015 | 2.5 - 4.5 | SW8260B | VOC | Dichlorodifluoromethane | 2.1 U | 2.1 | 5.3 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S003 | N | 3 Mar 2015 | 2.5 - 4.5 | SW8260B | VOC | Ethylbenzene | 1.1 U | 1.1 | 5.3 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S003 | N | 3 Mar 2015 | 2.5 - 4.5 | SW8260B | VOC | Hexachlorobutadiene | 2.1 U | 2.1 | 5.3 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S003 | N | 3 Mar 2015 | 2.5 - 4.5 | SW8260B | VOC | Isopropylbenzene | 1.1 U | 1.1 | 5.3 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S003 | N | 3 Mar 2015 | 2.5 - 4.5 | SW8260B | VOC | m,p-Xylenes | 2.1 U | 2.1 | 5.3 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S003 | N | 3 Mar 2015 | 2.5 - 4.5 | SW8260B | VOC | Methylene chloride | 2.1 U | 2.1 | 11 | 10 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S003 | N | 3 Mar 2015 | 2.5 - 4.5 | SW8260B | VOC | Methyl-tert-butyl Ether (MTBE) | 1.1 U | 1.1 | 5.3 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S003 | N | 3 Mar 2015 | 2.5 - 4.5 | SW8260B | VOC | n-butylbenzene | 1.1 U | 1.1 | 5.3 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S003 | N | 3 Mar 2015 | 2.5 - 4.5 | SW8260B | VOC | n-Propylbenzene | 1.1 U | 1.1 | 5.3 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S003 | N | 3 Mar 2015 | 2.5 - 4.5 | SW8260B | VOC | o-Xylene | 1.1 U | 1.1 | 5.3 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S003 | N | 3 Mar 2015 | 2.5 - 4.5 | SW8260B | VOC | p-Isopropyltoluene | 1.1 U | 1.1 | 5.3 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S003 | N | 3 Mar 2015 | 2.5 - 4.5 | SW8260B | VOC | sec-Butylbenzene | 1.1 U | 1.1 | 5.3 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S003 | N | 3 Mar 2015 | 2.5 - 4.5 | SW8260B | VOC | Styrene | 1.1 U | 1.1 | 5.3 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S003 | N | 3 Mar 2015 | 2.5 - 4.5 | SW8260B | VOC | tert-Butanol (TBA) | 11 U | 11 | 53 | | µg/kg | | NC |
| SO | BVBS1295 | BVBS1295S003 | N | 3 Mar 2015 | 2.5 - 4.5 | SW8260B | VOC | tert-Butylbenzene | 1.1 U | 1.1 | 5.3 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S003 | N | 3 Mar 2015 | 2.5 - 4.5 | SW8260B | VOC | Tetrachloroethene | 1.1 U | 1.1 | 5.3 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S003 | N | 3 Mar 2015 | 2.5 - 4.5 | SW8260B | VOC | Toluene | 1.1 U | 1.1 | 5.3 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S003 | N | 3 Mar 2015 | 2.5 - 4.5 | SW8260B | VOC | trans-1,2-Dichloroethene | 1.1 U | 1.1 | 5.3 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S003 | N | 3 Mar 2015 | 2.5 - 4.5 | SW8260B | VOC | trans-1,3-Dichloropropene | 1.1 U | 1.1 | 5.3 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S003 | N | 3 Mar 2015 | 2.5 - 4.5 | SW8260B | VOC | Trichloroethene | 1.1 U | 1.1 | 5.3 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S003 | N | 3 Mar 2015 | 2.5 - 4.5 | SW8260B | VOC | Trichlorofluoromethane | 2.1 U | 2.1 | 5.3 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S003 | N | 3 Mar 2015 | 2.5 - 4.5 | SW8260B | VOC | Trichloromethane (Chloroform) | 1.1 U | 1.1 | 5.3 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S003 | N | 3 Mar 2015 | 2.5 - 4.5 | SW8260B | VOC | Vinyl chloride | 2.1 U | 2.1 | 5.3 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S003SP | FS | 3 Mar 2015 | 2.5 - 4.5 | SW9045D | GENCHEM | pH | 7.32 = | | | | pH units | | NC |
| SO | BVBS1295 | BVBS1295S003SP | FS | 3 Mar 2015 | 2.5 - 4.5 | SW8015B | HC | Diesel Range Organics (C12-C14) | 5300 U | 1300 | 5300 | 5000 | µg/kg | X | N |
| SO | BVBS1295 | BVBS1295S003SP | FS | 3 Mar 2015 | 2.5 - 4.5 | SW8015B | HC | Diesel Range Organics (C15-C20) | 5300 U | 1300 | 5300 | 5000 | µg/kg | X | N |
| SO | BVBS1295 | BVBS1295S003SP | FS | 3 Mar 2015 | 2.5 - 4.5 | SW8015B | HC | Diesel Range Organics (C21-C30) | 5300 U | 1300 | 5300 | 5000 | µg/kg | X | N |
| SO | BVBS1295 | BVBS1295S003SP | FS | 3 Mar 2015 | 2.5 - 4.5 | SW8015B | HC | Diesel Range Organics (C8-C11) | 5300 U | 1300 | 5300 | 1000 | µg/kg | X | RL |
| SO | BVBS1295 | BVBS1295S003SP | FS | 3 Mar 2015 | 2.5 - 4.5 | SW8015B | HC | GRO (C4-C12) | 560 U | 140 | 560 | 1000 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S003SP | FS | 3 Mar 2015 | 2.5 - 4.5 | SW8270C-SIM | PAH | 1-Methylnaphthalene | 11 U | 4 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1295 | BVBS1295S003SP | FS | 3 Mar 2015 | 2.5 - 4.5 | SW8270C-SIM | PAH | 2-Methylnaphthalene | 11 U | 3.9 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1295 | BVBS1295S003SP | FS | 3 Mar 2015 | 2.5 - 4.5 | SW8270C-SIM | PAH | Acenaphthene | 11 U | 5.1 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1295 | BVBS1295S003SP | FS | 3 Mar 2015 | 2.5 - 4.5 | SW8270C-SIM | PAH | Acenaphthylene | 11 U | 4.9 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1295 | BVBS1295S003SP | FS | 3 Mar 2015 | 2.5 - 4.5 | SW8270C-SIM | PAH | Anthracene | 11 U | 5.9 | 11 | 2.5 | µg/kg | X | RL |

APPENDIX E-2

**Analytical Data 2015 Biovent Sampling**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | SL | Units | Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1295 | BVBS1295S003SP | FS | 3 Mar 2015 | 2.5 - 4.5 | SW8270C-SIM | PAH | Benzo(a)anthracene | 11 U | 5.1 | 11 | | µg/kg | | NC |
| SO | BVBS1295 | BVBS1295S003SP | FS | 3 Mar 2015 | 2.5 - 4.5 | SW8270C-SIM | PAH | Benzo(a)pyrene | 11 U | 5.5 | 11 | | µg/kg | | NC |
| SO | BVBS1295 | BVBS1295S003SP | FS | 3 Mar 2015 | 2.5 - 4.5 | SW8270C-SIM | PAH | Benzo(b)fluoranthene | 11 U | 5.6 | 11 | | µg/kg | | NC |
| SO | BVBS1295 | BVBS1295S003SP | FS | 3 Mar 2015 | 2.5 - 4.5 | SW8270C-SIM | PAH | Benzo(ghi)perylene | 11 U | 4.6 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1295 | BVBS1295S003SP | FS | 3 Mar 2015 | 2.5 - 4.5 | SW8270C-SIM | PAH | Benzo(k)fluoranthene | 11 U | 7.2 | 11 | | µg/kg | | NC |
| SO | BVBS1295 | BVBS1295S003SP | FS | 3 Mar 2015 | 2.5 - 4.5 | SW8270C-SIM | PAH | Chrysene | 11 U | 5.5 | 11 | | µg/kg | | NC |
| SO | BVBS1295 | BVBS1295S003SP | FS | 3 Mar 2015 | 2.5 - 4.5 | SW8270C-SIM | PAH | Dibenzo(a,h)anthracene | 11 U | 4.1 | 11 | | µg/kg | | NC |
| SO | BVBS1295 | BVBS1295S003SP | FS | 3 Mar 2015 | 2.5 - 4.5 | SW8270C-SIM | PAH | Fluoranthene | 11 U | 6.3 | 11 | 5.2 | µg/kg | X | RL |
| SO | BVBS1295 | BVBS1295S003SP | FS | 3 Mar 2015 | 2.5 - 4.5 | SW8270C-SIM | PAH | Fluorene | 11 U | 5.5 | 11 | 3.8 | µg/kg | X | RL |
| SO | BVBS1295 | BVBS1295S003SP | FS | 3 Mar 2015 | 2.5 - 4.5 | SW8270C-SIM | PAH | Indeno(1,2,3-cd)pyrene | 11 U | 4.9 | 11 | | µg/kg | | NC |
| SO | BVBS1295 | BVBS1295S003SP | FS | 3 Mar 2015 | 2.5 - 4.5 | SW8270C-SIM | PAH | Naphthalene | 11 U | 4.1 | 11 | 3.6 | µg/kg | X | RL |
| SO | BVBS1295 | BVBS1295S003SP | FS | 3 Mar 2015 | 2.5 - 4.5 | SW8270C-SIM | PAH | PAHTEQM | 0 U | | | 4.47 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S003SP | FS | 3 Mar 2015 | 2.5 - 4.5 | SW8270C-SIM | PAH | Phenanthrene | 11 U | 6.2 | 11 | 3.9 | µg/kg | X | RL |
| SO | BVBS1295 | BVBS1295S003SP | FS | 3 Mar 2015 | 2.5 - 4.5 | SW8270C-SIM | PAH | Pyrene | 11 U | 5.8 | 11 | 5.6 | µg/kg | X | RL |
| SO | BVBS1295 | BVBS1295S003SP | FS | 3 Mar 2015 | 2.5 - 4.5 | SW8270C-SIM | PHTH | Bis(2-ethylhexyl)phthalate | 10 J | 4.4 | 11 | 61 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S003SP | FS | 3 Mar 2015 | 2.5 - 4.5 | SW8270C-SIM | PHTH | Butyl benzyl phthalate | 7.1 J | 4.8 | 11 | 100 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S003SP | FS | 3 Mar 2015 | 2.5 - 4.5 | SW8270C-SIM | PHTH | Diethyl phthalate | 11 U | 5.4 | 11 | 27 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S003SP | FS | 3 Mar 2015 | 2.5 - 4.5 | SW8270C-SIM | PHTH | Dimethyl phthalate | 340 = | 5.8 | 11 | 27 | µg/kg | X | Y |
| SO | BVBS1295 | BVBS1295S003SP | FS | 3 Mar 2015 | 2.5 - 4.5 | SW8270C-SIM | PHTH | Di-n-butyl phthalate | 9.8 J | 5.6 | 11 | 27 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S003SP | FS | 3 Mar 2015 | 2.5 - 4.5 | SW8270C-SIM | PHTH | Di-n-octyl phthalate | 11 U | 5.1 | 11 | 27 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S003SP | FS | 3 Mar 2015 | 2.5 - 4.5 | SW8270C-SIM | SVOC | n-Nitrosodimethylamine | 11 U | 3.8 | 11 | 10 | µg/kg | X | N |
| SO | BVBS1295 | BVBS1295S003SP | FS | 3 Mar 2015 | 2.5 - 4.5 | SW8260B | VOC | 1,1,1,2-Tetrachloroethane | 0.23 U | 0.23 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S003SP | FS | 3 Mar 2015 | 2.5 - 4.5 | SW8260B | VOC | 1,1,1-Trichloroethane | 0.22 U | 0.22 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S003SP | FS | 3 Mar 2015 | 2.5 - 4.5 | SW8260B | VOC | 1,1,2,2-Tetrachloroethane | 0.33 U | 0.33 | 19 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S003SP | FS | 3 Mar 2015 | 2.5 - 4.5 | SW8260B | VOC | 1,1,2-Trichloro-1,2,2-trifluoroethane | 0.34 U | 0.34 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S003SP | FS | 3 Mar 2015 | 2.5 - 4.5 | SW8260B | VOC | 1,1,2-Trichloroethane | 0.34 U | 0.34 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S003SP | FS | 3 Mar 2015 | 2.5 - 4.5 | SW8260B | VOC | 1,1-Dichloroethane | 0.2 U | 0.2 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S003SP | FS | 3 Mar 2015 | 2.5 - 4.5 | SW8260B | VOC | 1,1-Dichloroethene | 0.33 U | 0.33 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S003SP | FS | 3 Mar 2015 | 2.5 - 4.5 | SW8260B | VOC | 1,1-Dichloropropene | 0.32 U | 0.32 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S003SP | FS | 3 Mar 2015 | 2.5 - 4.5 | SW8260B | VOC | 1,2,3-Trichlorobenzene | 0.88 U | 0.88 | 19 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S003SP | FS | 3 Mar 2015 | 2.5 - 4.5 | SW8260B | VOC | 1,2,3-Trichloropropane | 0.8 U | 0.8 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S003SP | FS | 3 Mar 2015 | 2.5 - 4.5 | SW8260B | VOC | 1,2,4-Trichlorobenzene | 0.3 U | 0.3 | 19 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S003SP | FS | 3 Mar 2015 | 2.5 - 4.5 | SW8260B | VOC | 1,2,4-Trimethylbenzene | 0.57 U | 0.57 | 9.6 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S003SP | FS | 3 Mar 2015 | 2.5 - 4.5 | SW8260B | VOC | 1,2-Dibromo-3-chloropropane | 1.7 U | 1.7 | 9.6 | 10 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S003SP | FS | 3 Mar 2015 | 2.5 - 4.5 | SW8260B | VOC | 1,2-Dibromoethane (EDB) | 0.25 U | 0.25 | 9.6 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S003SP | FS | 3 Mar 2015 | 2.5 - 4.5 | SW8260B | VOC | 1,2-Dichlorobenzene | 0.22 U | 0.22 | 4.8 | 5 | µg/kg | | N |

APPENDIX E-2

**Analytical Data 2015 Biovent Sampling**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | SL | Units | Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1295 | BVBS1295S003SP | FS | 3 Mar 2015 | 2.5 - 4.5 | SW8260B | VOC | 1,2-Dichloroethane | 0.3 U | 0.3 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S003SP | FS | 3 Mar 2015 | 2.5 - 4.5 | SW8260B | VOC | 1,2-Dichloropropane | 0.42 U | 0.42 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S003SP | FS | 3 Mar 2015 | 2.5 - 4.5 | SW8260B | VOC | 1,3,5-Trimethylbenzene | 0.53 U | 0.53 | 9.6 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S003SP | FS | 3 Mar 2015 | 2.5 - 4.5 | SW8260B | VOC | 1,3-Dichlorobenzene | 0.17 U | 0.17 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S003SP | FS | 3 Mar 2015 | 2.5 - 4.5 | SW8260B | VOC | 1,3-Dichloropropane | 0.24 U | 0.24 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S003SP | FS | 3 Mar 2015 | 2.5 - 4.5 | SW8260B | VOC | 1,4-Dichlorobenzene | 0.21 U | 0.21 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S003SP | FS | 3 Mar 2015 | 2.5 - 4.5 | SW8260B | VOC | 2-Butanone (MEK) | 3.6 U | 3.6 | 9.6 | 20 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S003SP | FS | 3 Mar 2015 | 2.5 - 4.5 | SW8260B | VOC | 2-Chloro-1,1,1-trifluoroethane | 0.6 U | 0.6 | 4.8 | 10 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S003SP | FS | 3 Mar 2015 | 2.5 - 4.5 | SW8260B | VOC | 2-Chlorotoluene | 0.22 U | 0.22 | 9.6 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S003SP | FS | 3 Mar 2015 | 2.5 - 4.5 | SW8260B | VOC | 2-Hexanone | 1.7 U | 1.7 | 9.6 | 10 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S003SP | FS | 3 Mar 2015 | 2.5 - 4.5 | SW8260B | VOC | 4-Chlorotoluene | 0.21 U | 0.21 | 9.6 | 10 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S003SP | FS | 3 Mar 2015 | 2.5 - 4.5 | SW8260B | VOC | 4-Methyl-2-pentanone (MIBK) | 4.2 U | 4.2 | 9.6 | 10 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S003SP | FS | 3 Mar 2015 | 2.5 - 4.5 | SW8260B | VOC | Acetone | 6.8 J | 6 | 19 | 20 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S003SP | FS | 3 Mar 2015 | 2.5 - 4.5 | SW8260B | VOC | Benzene | 0.13 U | 0.13 | 0.48 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S003SP | FS | 3 Mar 2015 | 2.5 - 4.5 | SW8260B | VOC | Bromobenzene | 0.2 U | 0.2 | 19 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S003SP | FS | 3 Mar 2015 | 2.5 - 4.5 | SW8260B | VOC | Bromochloromethane | 0.67 U | 0.67 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S003SP | FS | 3 Mar 2015 | 2.5 - 4.5 | SW8260B | VOC | Bromodichloromethane | 0.22 U | 0.22 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S003SP | FS | 3 Mar 2015 | 2.5 - 4.5 | SW8260B | VOC | Bromoform | 0.77 U | 0.77 | 9.6 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S003SP | FS | 3 Mar 2015 | 2.5 - 4.5 | SW8260B | VOC | Bromomethane | 9.1 U | 9.1 | 19 | 5 | µg/kg | X | RL |
| SO | BVBS1295 | BVBS1295S003SP | FS | 3 Mar 2015 | 2.5 - 4.5 | SW8260B | VOC | Carbon tetrachloride | 0.27 U | 0.27 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S003SP | FS | 3 Mar 2015 | 2.5 - 4.5 | SW8260B | VOC | Chlorobenzene | 0.22 U | 0.22 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S003SP | FS | 3 Mar 2015 | 2.5 - 4.5 | SW8260B | VOC | Chloroethane | 1.4 U | 1.4 | 9.6 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S003SP | FS | 3 Mar 2015 | 2.5 - 4.5 | SW8260B | VOC | Chloromethane | 0.29 U | 0.29 | 9.6 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S003SP | FS | 3 Mar 2015 | 2.5 - 4.5 | SW8260B | VOC | Chlorotrifluoroethylene | 1.1 U | 1.1 | 4.8 | 10 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S003SP | FS | 3 Mar 2015 | 2.5 - 4.5 | SW8260B | VOC | cis-1,2-Dichloroethene | 0.27 U | 0.27 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S003SP | FS | 3 Mar 2015 | 2.5 - 4.5 | SW8260B | VOC | cis-1,3-Dichloropropene | 0.25 U | 0.25 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S003SP | FS | 3 Mar 2015 | 2.5 - 4.5 | SW8260B | VOC | Dibromochloromethane | 0.55 U | 0.55 | 9.6 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S003SP | FS | 3 Mar 2015 | 2.5 - 4.5 | SW8260B | VOC | Dibromomethane | 0.75 U | 0.75 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S003SP | FS | 3 Mar 2015 | 2.5 - 4.5 | SW8260B | VOC | Dichlorodifluoromethane | 0.43 U | 0.43 | 9.6 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S003SP | FS | 3 Mar 2015 | 2.5 - 4.5 | SW8260B | VOC | Ethylbenzene | 0.15 U | 0.15 | 9.6 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S003SP | FS | 3 Mar 2015 | 2.5 - 4.5 | SW8260B | VOC | Hexachlorobutadiene | 0.31 U | 0.31 | 19 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S003SP | FS | 3 Mar 2015 | 2.5 - 4.5 | SW8260B | VOC | Isopropylbenzene | 0.53 U | 0.53 | 9.6 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S003SP | FS | 3 Mar 2015 | 2.5 - 4.5 | SW8260B | VOC | m,p-Xylenes | 0.26 U | 0.26 | 19 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S003SP | FS | 3 Mar 2015 | 2.5 - 4.5 | SW8260B | VOC | Methylene chloride | 1.3 U | 1.3 | 4.8 | 10 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S003SP | FS | 3 Mar 2015 | 2.5 - 4.5 | SW8260B | VOC | Methyl-tert-butyl Ether (MTBE) | 0.28 U | 0.28 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S003SP | FS | 3 Mar 2015 | 2.5 - 4.5 | SW8260B | VOC | n-butylbenzene | 0.15 U | 0.15 | 19 | 5 | µg/kg | | N |

APPENDIX E-2

**Analytical Data 2015 Biovent Sampling**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | SL | Units | Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1295 | BVBS1295S003SP | FS | 3 Mar 2015 | 2.5 - 4.5 | SW8260B | VOC | n-Propylbenzene | 0.48 U | 0.48 | 9.6 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S003SP | FS | 3 Mar 2015 | 2.5 - 4.5 | SW8260B | VOC | o-Xylene | 0.54 U | 0.54 | 9.6 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S003SP | FS | 3 Mar 2015 | 2.5 - 4.5 | SW8260B | VOC | p-Isopropyltoluene | 0.61 U | 0.61 | 19 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S003SP | FS | 3 Mar 2015 | 2.5 - 4.5 | SW8260B | VOC | sec-Butylbenzene | 0.56 U | 0.56 | 19 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S003SP | FS | 3 Mar 2015 | 2.5 - 4.5 | SW8260B | VOC | Styrene | 0.58 U | 0.58 | 19 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S003SP | FS | 3 Mar 2015 | 2.5 - 4.5 | SW8260B | VOC | tert-Butylbenzene | 0.15 U | 0.15 | 19 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S003SP | FS | 3 Mar 2015 | 2.5 - 4.5 | SW8260B | VOC | Tetrachloroethene | 0.2 U | 0.2 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S003SP | FS | 3 Mar 2015 | 2.5 - 4.5 | SW8260B | VOC | Toluene | 0.5 U | 0.5 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S003SP | FS | 3 Mar 2015 | 2.5 - 4.5 | SW8260B | VOC | trans-1,2-Dichloroethene | 0.49 U | 0.49 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S003SP | FS | 3 Mar 2015 | 2.5 - 4.5 | SW8260B | VOC | trans-1,3-Dichloropropene | 0.58 U | 0.58 | 9.6 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S003SP | FS | 3 Mar 2015 | 2.5 - 4.5 | SW8260B | VOC | Trichloroethene | 0.29 U | 0.29 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S003SP | FS | 3 Mar 2015 | 2.5 - 4.5 | SW8260B | VOC | Trichlorofluoromethane | 0.36 U | 0.36 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S003SP | FS | 3 Mar 2015 | 2.5 - 4.5 | SW8260B | VOC | Trichloromethane (Chloroform) | 0.23 U | 0.23 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S003SP | FS | 3 Mar 2015 | 2.5 - 4.5 | SW8260B | VOC | Vinyl chloride | 0.49 U | 0.49 | 9.6 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S004 | N | 3 Mar 2015 | 5.5 - 8 | SW9045D | GENCHEM | pH | 7.77 = | | | | pH units | | NC |
| SO | BVBS1295 | BVBS1295S004 | N | 3 Mar 2015 | 5.5 - 8 | SW8015B | HC | Diesel Range Organics (C12-C14) | 8000 = | 2800 | 5500 | 5000 | µg/kg | X | Y |
| SO | BVBS1295 | BVBS1295S004 | N | 3 Mar 2015 | 5.5 - 8 | SW8015B | HC | Diesel Range Organics (C15-C20) | 40000 = | 2800 | 5500 | 5000 | µg/kg | X | Y |
| SO | BVBS1295 | BVBS1295S004 | N | 3 Mar 2015 | 5.5 - 8 | SW8015B | HC | Diesel Range Organics (C21-C30) | 5500 U | 2800 | 5500 | 5000 | µg/kg | X | N |
| SO | BVBS1295 | BVBS1295S004 | N | 3 Mar 2015 | 5.5 - 8 | SW8015B | HC | Diesel Range Organics (C8-C11) | 5500 U | 2800 | 5500 | 1000 | µg/kg | X | RL |
| SO | BVBS1295 | BVBS1295S004 | N | 3 Mar 2015 | 5.5 - 8 | SW8015B | HC | GRO (C4-C12) | 6400 = | 460 | 930 | 1000 | µg/kg | X | Y |
| SO | BVBS1295 | BVBS1295S004 | N | 3 Mar 2015 | 5.5 - 8 | SW8015B | HC | ORO (C31-C40) | 11000 U | 5500 | 11000 | 10000 | µg/kg | X | N |
| SO | BVBS1295 | BVBS1295S004 | N | 3 Mar 2015 | 5.5 - 8 | SW8015B | HC | TOTAL EFH(C8-C40) | 50000 = | 2800 | 5500 | 10000 | µg/kg | X | Y |
| SO | BVBS1295 | BVBS1295S004 | N | 3 Mar 2015 | 5.5 - 8 | SW8270C-SIM | PAH | 1-Methylnaphthalene | 11 U | 5.5 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1295 | BVBS1295S004 | N | 3 Mar 2015 | 5.5 - 8 | SW8270C-SIM | PAH | 2-Methylnaphthalene | 11 U | 5.5 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1295 | BVBS1295S004 | N | 3 Mar 2015 | 5.5 - 8 | SW8270C-SIM | PAH | Acenaphthene | 11 U | 5.5 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1295 | BVBS1295S004 | N | 3 Mar 2015 | 5.5 - 8 | SW8270C-SIM | PAH | Acenaphthylene | 11 U | 5.5 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1295 | BVBS1295S004 | N | 3 Mar 2015 | 5.5 - 8 | SW8270C-SIM | PAH | Anthracene | 11 U | 5.5 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1295 | BVBS1295S004 | N | 3 Mar 2015 | 5.5 - 8 | SW8270C-SIM | PAH | Benzo(a)anthracene | 16 = | 5.5 | 11 | | µg/kg | | NC |
| SO | BVBS1295 | BVBS1295S004 | N | 3 Mar 2015 | 5.5 - 8 | SW8270C-SIM | PAH | Benzo(a)pyrene | 8.1 J | 5.5 | 11 | | µg/kg | | NC |
| SO | BVBS1295 | BVBS1295S004 | N | 3 Mar 2015 | 5.5 - 8 | SW8270C-SIM | PAH | Benzo(b)fluoranthene | 10 J | 5.5 | 11 | | µg/kg | | NC |
| SO | BVBS1295 | BVBS1295S004 | N | 3 Mar 2015 | 5.5 - 8 | SW8270C-SIM | PAH | Benzo(ghi)perylene | 9.3 J | 5.5 | 11 | 2.5 | µg/kg | X | Y |
| SO | BVBS1295 | BVBS1295S004 | N | 3 Mar 2015 | 5.5 - 8 | SW8270C-SIM | PAH | Benzo(k)fluoranthene | 11 U | 5.5 | 11 | | µg/kg | | NC |
| SO | BVBS1295 | BVBS1295S004 | N | 3 Mar 2015 | 5.5 - 8 | SW8270C-SIM | PAH | Chrysene | 11 U | 5.5 | 11 | | µg/kg | | NC |
| SO | BVBS1295 | BVBS1295S004 | N | 3 Mar 2015 | 5.5 - 8 | SW8270C-SIM | PAH | Dibenzo(a,h)anthracene | 11 U | 5.5 | 11 | | µg/kg | | NC |
| SO | BVBS1295 | BVBS1295S004 | N | 3 Mar 2015 | 5.5 - 8 | SW8270C-SIM | PAH | Fluoranthene | 68 J | 5.5 | 11 | 5.2 | µg/kg | X | Y |
| SO | BVBS1295 | BVBS1295S004 | N | 3 Mar 2015 | 5.5 - 8 | SW8270C-SIM | PAH | Fluorene | 11 U | 5.5 | 11 | 3.8 | µg/kg | X | RL |

APPENDIX E-2

**Analytical Data 2015 Biovent Sampling**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | SL | Units | Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1295 | BVBS1295S004 | N | 3 Mar 2015 | 5.5 - 8 | SW8270C-SIM | PAH | Indeno(1,2,3-cd)pyrene | 11 U | 5.5 | 11 | | µg/kg | | NC |
| SO | BVBS1295 | BVBS1295S004 | N | 3 Mar 2015 | 5.5 - 8 | SW8270C-SIM | PAH | Naphthalene | 11 U | 5.5 | 11 | 3.6 | µg/kg | X | RL |
| SO | BVBS1295 | BVBS1295S004 | N | 3 Mar 2015 | 5.5 - 8 | SW8270C-SIM | PAH | PAHTEQM | 10.7 = | | | 4.47 | µg/kg | X | Y |
| SO | BVBS1295 | BVBS1295S004 | N | 3 Mar 2015 | 5.5 - 8 | SW8270C-SIM | PAH | Phenanthrene | 11 U | 5.5 | 11 | 3.9 | µg/kg | X | RL |
| SO | BVBS1295 | BVBS1295S004 | N | 3 Mar 2015 | 5.5 - 8 | SW8270C-SIM | PAH | Pyrene | 120 J | 5.5 | 11 | 5.6 | µg/kg | X | Y |
| SO | BVBS1295 | BVBS1295S004 | N | 3 Mar 2015 | 5.5 - 8 | SW8270C-SIM | PHTH | Bis(2-ethylhexyl)phthalate | 820 = | 11 | 22 | 61 | µg/kg | X | Y |
| SO | BVBS1295 | BVBS1295S004 | N | 3 Mar 2015 | 5.5 - 8 | SW8270C-SIM | PHTH | Butyl benzyl phthalate | 22 U | 11 | 22 | 100 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S004 | N | 3 Mar 2015 | 5.5 - 8 | SW8270C-SIM | PHTH | Diethyl phthalate | 22 U | 11 | 22 | 27 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S004 | N | 3 Mar 2015 | 5.5 - 8 | SW8270C-SIM | PHTH | Dimethyl phthalate | 22 U | 11 | 22 | 27 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S004 | N | 3 Mar 2015 | 5.5 - 8 | SW8270C-SIM | PHTH | Di-n-butyl phthalate | 22 U | 11 | 22 | 27 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S004 | N | 3 Mar 2015 | 5.5 - 8 | SW8270C-SIM | PHTH | Di-n-octyl phthalate | 22 U | 11 | 22 | 27 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S004 | N | 3 Mar 2015 | 5.5 - 8 | SW8260B | SVOC | Diisopropyl ether | 0.95 U | 0.95 | 9.5 | 10 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S004 | N | 3 Mar 2015 | 5.5 - 8 | SW8270C-SIM | SVOC | n-Nitrosodimethylamine | 22 U | 11 | 22 | 10 | µg/kg | X | RL |
| SO | BVBS1295 | BVBS1295S004 | N | 3 Mar 2015 | 5.5 - 8 | SW8260B | SVOC | tert-Amyl methyl ether | 0.95 U | 0.95 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S004 | N | 3 Mar 2015 | 5.5 - 8 | SW8260B | SVOC | tert-Butyl ethyl ether | 0.95 U | 0.95 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S004 | N | 3 Mar 2015 | 5.5 - 8 | SW8260B | VOC | 1,1,1,2-Tetrachloroethane | 0.95 U | 0.95 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S004 | N | 3 Mar 2015 | 5.5 - 8 | SW8260B | VOC | 1,1,1-Trichloroethane | 0.95 U | 0.95 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S004 | N | 3 Mar 2015 | 5.5 - 8 | SW8260B | VOC | 1,1,2,2-Tetrachloroethane | 0.95 U | 0.95 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S004 | N | 3 Mar 2015 | 5.5 - 8 | SW8260B | VOC | 1,1,2-Trichloro-1,2,2-trifluoroethane | 1.9 U | 1.9 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S004 | N | 3 Mar 2015 | 5.5 - 8 | SW8260B | VOC | 1,1,2-Trichloroethane | 0.95 U | 0.95 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S004 | N | 3 Mar 2015 | 5.5 - 8 | SW8260B | VOC | 1,1-Dichloroethane | 0.95 U | 0.95 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S004 | N | 3 Mar 2015 | 5.5 - 8 | SW8260B | VOC | 1,1-Dichloroethene | 0.95 U | 0.95 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S004 | N | 3 Mar 2015 | 5.5 - 8 | SW8260B | VOC | 1,1-Dichloropropene | 0.95 U | 0.95 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S004 | N | 3 Mar 2015 | 5.5 - 8 | SW8260B | VOC | 1,2,3-Trichlorobenzene | 1.9 U | 1.9 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S004 | N | 3 Mar 2015 | 5.5 - 8 | SW8260B | VOC | 1,2,3-Trichloropropane | 1.9 U | 1.9 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S004 | N | 3 Mar 2015 | 5.5 - 8 | SW8260B | VOC | 1,2,4-Trichlorobenzene | 1.9 U | 1.9 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S004 | N | 3 Mar 2015 | 5.5 - 8 | SW8260B | VOC | 1,2,4-Trimethylbenzene | 0.95 U | 0.95 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S004 | N | 3 Mar 2015 | 5.5 - 8 | SW8260B | VOC | 1,2-Dibromo-3-chloropropane | 1.9 U | 1.9 | 9.5 | 10 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S004 | N | 3 Mar 2015 | 5.5 - 8 | SW8260B | VOC | 1,2-Dibromoethane (EDB) | 0.95 U | 0.95 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S004 | N | 3 Mar 2015 | 5.5 - 8 | SW8260B | VOC | 1,2-Dichlorobenzene | 0.95 U | 0.95 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S004 | N | 3 Mar 2015 | 5.5 - 8 | SW8260B | VOC | 1,2-Dichloroethane | 0.95 U | 0.95 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S004 | N | 3 Mar 2015 | 5.5 - 8 | SW8260B | VOC | 1,2-Dichloropropane | 0.95 U | 0.95 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S004 | N | 3 Mar 2015 | 5.5 - 8 | SW8260B | VOC | 1,3,5-Trimethylbenzene | 0.95 U | 0.95 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S004 | N | 3 Mar 2015 | 5.5 - 8 | SW8260B | VOC | 1,3-Dichlorobenzene | 0.95 U | 0.95 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S004 | N | 3 Mar 2015 | 5.5 - 8 | SW8260B | VOC | 1,3-Dichloropropane | 0.95 U | 0.95 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S004 | N | 3 Mar 2015 | 5.5 - 8 | SW8260B | VOC | 1,4-Dichlorobenzene | 0.95 U | 0.95 | 4.7 | 5 | µg/kg | | N |

APPENDIX E-2

**Analytical Data 2015 Biovent Sampling**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | SL | Units | Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1295 | BVBS1295S004 | N | 3 Mar 2015 | 5.5 - 8 | SW8260B | VOC | 2,2-Dichloropropane | 1.9 U | 1.9 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S004 | N | 3 Mar 2015 | 5.5 - 8 | SW8260B | VOC | 2-Butanone (MEK) | 4.7 U | 4.7 | 19 | 20 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S004 | N | 3 Mar 2015 | 5.5 - 8 | SW8260B | VOC | 2-Chloro-1,1,1-trifluoroethane | 1.9 U | 1.9 | 9.5 | 10 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S004 | N | 3 Mar 2015 | 5.5 - 8 | SW8260B | VOC | 2-Chloroethyl vinyl ether | 1.9 U | 1.9 | 9.5 | 10 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S004 | N | 3 Mar 2015 | 5.5 - 8 | SW8260B | VOC | 2-Chlorotoluene | 0.95 U | 0.95 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S004 | N | 3 Mar 2015 | 5.5 - 8 | SW8260B | VOC | 2-Hexanone | 4.7 U | 4.7 | 9.5 | 10 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S004 | N | 3 Mar 2015 | 5.5 - 8 | SW8260B | VOC | 4-Chlorotoluene | 0.95 U | 0.95 | 9.5 | 10 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S004 | N | 3 Mar 2015 | 5.5 - 8 | SW8260B | VOC | 4-Methyl-2-pentanone (MIBK) | 4.7 U | 4.7 | 9.5 | 10 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S004 | N | 3 Mar 2015 | 5.5 - 8 | SW8260B | VOC | Acetone | 4.7 U | 4.7 | 19 | 20 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S004 | N | 3 Mar 2015 | 5.5 - 8 | SW8260B | VOC | Benzene | 0.95 U | 0.95 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S004 | N | 3 Mar 2015 | 5.5 - 8 | SW8260B | VOC | Bromobenzene | 0.95 U | 0.95 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S004 | N | 3 Mar 2015 | 5.5 - 8 | SW8260B | VOC | Bromochloromethane | 0.95 U | 0.95 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S004 | N | 3 Mar 2015 | 5.5 - 8 | SW8260B | VOC | Bromodichloromethane | 0.95 U | 0.95 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S004 | N | 3 Mar 2015 | 5.5 - 8 | SW8260B | VOC | Bromoform | 1.9 U | 1.9 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S004 | N | 3 Mar 2015 | 5.5 - 8 | SW8260B | VOC | Bromomethane | 1.9 U | 1.9 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S004 | N | 3 Mar 2015 | 5.5 - 8 | SW8260B | VOC | Carbon tetrachloride | 0.95 U | 0.95 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S004 | N | 3 Mar 2015 | 5.5 - 8 | SW8260B | VOC | Chlorobenzene | 0.95 U | 0.95 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S004 | N | 3 Mar 2015 | 5.5 - 8 | SW8260B | VOC | Chloroethane | 1.9 U | 1.9 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S004 | N | 3 Mar 2015 | 5.5 - 8 | SW8260B | VOC | Chloromethane | 1.9 U | 1.9 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S004 | N | 3 Mar 2015 | 5.5 - 8 | SW8260B | VOC | Chlorotrifluoroethylene | 1.9 U | 1.9 | 9.5 | 10 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S004 | N | 3 Mar 2015 | 5.5 - 8 | SW8260B | VOC | cis-1,2-Dichloroethene | 0.95 U | 0.95 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S004 | N | 3 Mar 2015 | 5.5 - 8 | SW8260B | VOC | cis-1,3-Dichloropropene | 0.95 U | 0.95 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S004 | N | 3 Mar 2015 | 5.5 - 8 | SW8260B | VOC | Dibromochloromethane | 0.95 U | 0.95 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S004 | N | 3 Mar 2015 | 5.5 - 8 | SW8260B | VOC | Dibromomethane | 0.95 U | 0.95 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S004 | N | 3 Mar 2015 | 5.5 - 8 | SW8260B | VOC | Dichlorodifluoromethane | 1.9 U | 1.9 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S004 | N | 3 Mar 2015 | 5.5 - 8 | SW8260B | VOC | Ethylbenzene | 0.95 U | 0.95 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S004 | N | 3 Mar 2015 | 5.5 - 8 | SW8260B | VOC | Hexachlorobutadiene | 1.9 U | 1.9 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S004 | N | 3 Mar 2015 | 5.5 - 8 | SW8260B | VOC | Isopropylbenzene | 0.95 U | 0.95 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S004 | N | 3 Mar 2015 | 5.5 - 8 | SW8260B | VOC | m,p-Xylenes | 1.9 U | 1.9 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S004 | N | 3 Mar 2015 | 5.5 - 8 | SW8260B | VOC | Methylene chloride | 1.9 U | 1.9 | 9.5 | 10 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S004 | N | 3 Mar 2015 | 5.5 - 8 | SW8260B | VOC | Methyl-tert-butyl Ether (MTBE) | 0.95 U | 0.95 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S004 | N | 3 Mar 2015 | 5.5 - 8 | SW8260B | VOC | n-butylbenzene | 0.95 U | 0.95 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S004 | N | 3 Mar 2015 | 5.5 - 8 | SW8260B | VOC | n-Propylbenzene | 0.95 U | 0.95 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S004 | N | 3 Mar 2015 | 5.5 - 8 | SW8260B | VOC | o-Xylene | 0.95 U | 0.95 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S004 | N | 3 Mar 2015 | 5.5 - 8 | SW8260B | VOC | p-Isopropyltoluene | 0.95 U | 0.95 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S004 | N | 3 Mar 2015 | 5.5 - 8 | SW8260B | VOC | sec-Butylbenzene | 0.95 U | 0.95 | 4.7 | 5 | µg/kg | | N |

APPENDIX E-2

**Analytical Data 2015 Biovent Sampling**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | SL | Units | Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1295 | BVBS1295S004 | N | 3 Mar 2015 | 5.5 - 8 | SW8260B | VOC | Styrene | 0.95 U | 0.95 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S004 | N | 3 Mar 2015 | 5.5 - 8 | SW8260B | VOC | tert-Butanol (TBA) | 9.5 U | 9.5 | 47 | | µg/kg | | NC |
| SO | BVBS1295 | BVBS1295S004 | N | 3 Mar 2015 | 5.5 - 8 | SW8260B | VOC | tert-Butylbenzene | 0.95 U | 0.95 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S004 | N | 3 Mar 2015 | 5.5 - 8 | SW8260B | VOC | Tetrachloroethene | 0.95 U | 0.95 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S004 | N | 3 Mar 2015 | 5.5 - 8 | SW8260B | VOC | Toluene | 0.95 U | 0.95 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S004 | N | 3 Mar 2015 | 5.5 - 8 | SW8260B | VOC | trans-1,2-Dichloroethene | 0.95 U | 0.95 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S004 | N | 3 Mar 2015 | 5.5 - 8 | SW8260B | VOC | trans-1,3-Dichloropropene | 0.95 U | 0.95 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S004 | N | 3 Mar 2015 | 5.5 - 8 | SW8260B | VOC | Trichloroethene | 0.95 U | 0.95 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S004 | N | 3 Mar 2015 | 5.5 - 8 | SW8260B | VOC | Trichlorofluoromethane | 1.9 U | 1.9 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S004 | N | 3 Mar 2015 | 5.5 - 8 | SW8260B | VOC | Trichloromethane (Chloroform) | 0.95 U | 0.95 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S004 | N | 3 Mar 2015 | 5.5 - 8 | SW8260B | VOC | Vinyl chloride | 1.9 U | 1.9 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S005 | N | 10 Apr 2015 | 2.5 - 4 | SW9045D | GENCHEM | pH | 6.76 = | | | | pH units | | NC |
| SO | BVBS1295 | BVBS1295S005 | N | 10 Apr 2015 | 2.5 - 4 | M8015D | HC | Diesel Range Organics (C12-C14) | 51000 = | 2500 | 5000 | 5000 | µg/kg | X | Y |
| SO | BVBS1295 | BVBS1295S005 | N | 10 Apr 2015 | 2.5 - 4 | M8015D | HC | Diesel Range Organics (C15-C20) | 71000 = | 2500 | 5000 | 5000 | µg/kg | X | Y |
| SO | BVBS1295 | BVBS1295S005 | N | 10 Apr 2015 | 2.5 - 4 | M8015D | HC | Diesel Range Organics (C21-C30) | 15000 = | 2500 | 5000 | 5000 | µg/kg | X | Y |
| SO | BVBS1295 | BVBS1295S005 | N | 10 Apr 2015 | 2.5 - 4 | M8015D | HC | Diesel Range Organics (C8-C11) | 9800 U | 2500 | 5000 | 1000 | µg/kg | X | RL |
| SO | BVBS1295 | BVBS1295S005 | N | 10 Apr 2015 | 2.5 - 4 | SW8015B | HC | GRO (C4-C12) | 37000 = | 500 | 990 | 1000 | µg/kg | X | Y |
| SO | BVBS1295 | BVBS1295S005 | N | 10 Apr 2015 | 2.5 - 4 | M8015D | HC | ORO (C31-C40) | 10000 U | 5000 | 10000 | 10000 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S005 | N | 10 Apr 2015 | 2.5 - 4 | M8015D | HC | TOTAL EFH(C8-C40) | 150000 = | 2500 | 5000 | 10000 | µg/kg | X | Y |
| SO | BVBS1295 | BVBS1295S005 | N | 10 Apr 2015 | 2.5 - 4 | SW8270C-SIM | PAH | 1-Methylnaphthalene | 10 U | 5 | 10 | 2.5 | µg/kg | X | RL |
| SO | BVBS1295 | BVBS1295S005 | N | 10 Apr 2015 | 2.5 - 4 | SW8270C-SIM | PAH | 2-Methylnaphthalene | 10 U | 5 | 10 | 2.5 | µg/kg | X | RL |
| SO | BVBS1295 | BVBS1295S005 | N | 10 Apr 2015 | 2.5 - 4 | SW8270C-SIM | PAH | Acenaphthene | 10 U | 5 | 10 | 2.5 | µg/kg | X | RL |
| SO | BVBS1295 | BVBS1295S005 | N | 10 Apr 2015 | 2.5 - 4 | SW8270C-SIM | PAH | Acenaphthylene | 10 U | 5 | 10 | 2.5 | µg/kg | X | RL |
| SO | BVBS1295 | BVBS1295S005 | N | 10 Apr 2015 | 2.5 - 4 | SW8270C-SIM | PAH | Anthracene | 6.9 J | 5 | 10 | 2.5 | µg/kg | X | Y |
| SO | BVBS1295 | BVBS1295S005 | N | 10 Apr 2015 | 2.5 - 4 | SW8270C-SIM | PAH | Benzo(a)anthracene | 9.3 J | 5 | 10 | | µg/kg | | NC |
| SO | BVBS1295 | BVBS1295S005 | N | 10 Apr 2015 | 2.5 - 4 | SW8270C-SIM | PAH | Benzo(a)pyrene | 9.2 J | 5 | 10 | | µg/kg | | NC |
| SO | BVBS1295 | BVBS1295S005 | N | 10 Apr 2015 | 2.5 - 4 | SW8270C-SIM | PAH | Benzo(b)fluoranthene | 15 = | 5 | 10 | | µg/kg | | NC |
| SO | BVBS1295 | BVBS1295S005 | N | 10 Apr 2015 | 2.5 - 4 | SW8270C-SIM | PAH | Benzo(ghi)perylene | 22 = | 5 | 10 | 2.5 | µg/kg | X | Y |
| SO | BVBS1295 | BVBS1295S005 | N | 10 Apr 2015 | 2.5 - 4 | SW8270C-SIM | PAH | Benzo(k)fluoranthene | 5.2 J | 5 | 10 | | µg/kg | | NC |
| SO | BVBS1295 | BVBS1295S005 | N | 10 Apr 2015 | 2.5 - 4 | SW8270C-SIM | PAH | Chrysene | 9.2 J | 5 | 10 | | µg/kg | | NC |
| SO | BVBS1295 | BVBS1295S005 | N | 10 Apr 2015 | 2.5 - 4 | SW8270C-SIM | PAH | Dibenzo(a,h)anthracene | 10 U | 5 | 10 | | µg/kg | | NC |
| SO | BVBS1295 | BVBS1295S005 | N | 10 Apr 2015 | 2.5 - 4 | SW8270C-SIM | PAH | Fluoranthene | 44 = | 5 | 10 | 5.2 | µg/kg | X | Y |
| SO | BVBS1295 | BVBS1295S005 | N | 10 Apr 2015 | 2.5 - 4 | SW8270C-SIM | PAH | Fluorene | 10 U | 5 | 10 | 3.8 | µg/kg | X | RL |
| SO | BVBS1295 | BVBS1295S005 | N | 10 Apr 2015 | 2.5 - 4 | SW8270C-SIM | PAH | Indeno(1,2,3-cd)pyrene | 12 = | 5 | 10 | | µg/kg | | NC |
| SO | BVBS1295 | BVBS1295S005 | N | 10 Apr 2015 | 2.5 - 4 | SW8270C-SIM | PAH | Naphthalene | 12 = | 5 | 10 | 3.6 | µg/kg | X | Y |
| SO | BVBS1295 | BVBS1295S005 | N | 10 Apr 2015 | 2.5 - 4 | SW8270C-SIM | PAH | PAHTEQM | 13.442 = | | | 4.47 | µg/kg | X | Y |

APPENDIX E-2

**Analytical Data 2015 Biovent Sampling**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | SL | Units | Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1295 | BVBS1295S005 | N | 10 Apr 2015 | 2.5 - 4 | SW8270C-SIM | PAH | Phenanthrene | 24 = | 5 | 10 | 3.9 | µg/kg | X | Y |
| SO | BVBS1295 | BVBS1295S005 | N | 10 Apr 2015 | 2.5 - 4 | SW8270C-SIM | PAH | Pyrene | 69 = | 5 | 10 | 5.6 | µg/kg | X | Y |
| SO | BVBS1295 | BVBS1295S005 | N | 10 Apr 2015 | 2.5 - 4 | SW8270C-SIM | PHTH | Bis(2-ethylhexyl)phthalate | 450 = | 10 | 20 | 61 | µg/kg | X | Y |
| SO | BVBS1295 | BVBS1295S005 | N | 10 Apr 2015 | 2.5 - 4 | SW8270C-SIM | PHTH | Butyl benzyl phthalate | 20 U | 10 | 20 | 100 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S005 | N | 10 Apr 2015 | 2.5 - 4 | SW8270C-SIM | PHTH | Diethyl phthalate | 20 U | 10 | 20 | 27 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S005 | N | 10 Apr 2015 | 2.5 - 4 | SW8270C-SIM | PHTH | Dimethyl phthalate | 20 U | 10 | 20 | 27 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S005 | N | 10 Apr 2015 | 2.5 - 4 | SW8270C-SIM | PHTH | Di-n-butyl phthalate | 20 U | 10 | 20 | 27 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S005 | N | 10 Apr 2015 | 2.5 - 4 | SW8270C-SIM | PHTH | Di-n-octyl phthalate | 20 U | 10 | 20 | 27 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S005 | N | 10 Apr 2015 | 2.5 - 4 | SW8260B | SVOC | Diisopropyl ether | 0.93 U | 0.93 | 9.3 | 10 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S005 | N | 10 Apr 2015 | 2.5 - 4 | SW8270C-SIM | SVOC | n-Nitrosodimethylamine | 20 U | 10 | 20 | 10 | µg/kg | X | N |
| SO | BVBS1295 | BVBS1295S005 | N | 10 Apr 2015 | 2.5 - 4 | SW8260B | SVOC | tert-Amyl methyl ether | 0.93 U | 0.93 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S005 | N | 10 Apr 2015 | 2.5 - 4 | SW8260B | SVOC | tert-Butyl ethyl ether | 0.93 U | 0.93 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S005 | N | 10 Apr 2015 | 2.5 - 4 | SW8260B | VOC | 1,1,1,2-Tetrachloroethane | 0.93 U | 0.93 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S005 | N | 10 Apr 2015 | 2.5 - 4 | SW8260B | VOC | 1,1,1-Trichloroethane | 9.6 = | 0.93 | 4.7 | 5 | µg/kg | X | Y |
| SO | BVBS1295 | BVBS1295S005 | N | 10 Apr 2015 | 2.5 - 4 | SW8260B | VOC | 1,1,2,2-Tetrachloroethane | 0.93 U | 0.93 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S005 | N | 10 Apr 2015 | 2.5 - 4 | SW8260B | VOC | 1,1,2-Trichloro-1,2,2-trifluoroethane | 1.9 U | 1.9 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S005 | N | 10 Apr 2015 | 2.5 - 4 | SW8260B | VOC | 1,1,2-Trichloroethane | 0.93 U | 0.93 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S005 | N | 10 Apr 2015 | 2.5 - 4 | SW8260B | VOC | 1,1-Dichloroethane | 2 J | 0.93 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S005 | N | 10 Apr 2015 | 2.5 - 4 | SW8260B | VOC | 1,1-Dichloroethene | 0.93 U | 0.93 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S005 | N | 10 Apr 2015 | 2.5 - 4 | SW8260B | VOC | 1,1-Dichloropropene | 0.93 U | 0.93 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S005 | N | 10 Apr 2015 | 2.5 - 4 | SW8260B | VOC | 1,2,3-Trichlorobenzene | 1.9 U | 1.9 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S005 | N | 10 Apr 2015 | 2.5 - 4 | SW8260B | VOC | 1,2,3-Trichloropropane | 1.9 U | 1.9 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S005 | N | 10 Apr 2015 | 2.5 - 4 | SW8260B | VOC | 1,2,4-Trichlorobenzene | 1.9 U | 1.9 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S005 | N | 10 Apr 2015 | 2.5 - 4 | SW8260B | VOC | 1,2,4-Trimethylbenzene | 0.93 U | 0.93 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S005 | N | 10 Apr 2015 | 2.5 - 4 | SW8260B | VOC | 1,2-Dibromo-3-chloropropane | 1.9 U | 1.9 | 9.3 | 10 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S005 | N | 10 Apr 2015 | 2.5 - 4 | SW8260B | VOC | 1,2-Dibromoethane (EDB) | 0.93 U | 0.93 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S005 | N | 10 Apr 2015 | 2.5 - 4 | SW8260B | VOC | 1,2-Dichlorobenzene | 0.93 U | 0.93 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S005 | N | 10 Apr 2015 | 2.5 - 4 | SW8260B | VOC | 1,2-Dichloroethane | 0.93 U | 0.93 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S005 | N | 10 Apr 2015 | 2.5 - 4 | SW8260B | VOC | 1,2-Dichloropropane | 0.93 U | 0.93 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S005 | N | 10 Apr 2015 | 2.5 - 4 | SW8260B | VOC | 1,3,5-Trimethylbenzene | 0.93 U | 0.93 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S005 | N | 10 Apr 2015 | 2.5 - 4 | SW8260B | VOC | 1,3-Dichlorobenzene | 0.93 U | 0.93 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S005 | N | 10 Apr 2015 | 2.5 - 4 | SW8260B | VOC | 1,3-Dichloropropane | 0.93 U | 0.93 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S005 | N | 10 Apr 2015 | 2.5 - 4 | SW8260B | VOC | 1,4-Dichlorobenzene | 0.93 U | 0.93 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S005 | N | 10 Apr 2015 | 2.5 - 4 | SW8260B | VOC | 2,2-Dichloropropane | 1.9 U | 1.9 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S005 | N | 10 Apr 2015 | 2.5 - 4 | SW8260B | VOC | 2-Butanone (MEK) | 4.7 U | 4.7 | 19 | 20 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S005 | N | 10 Apr 2015 | 2.5 - 4 | SW8260B | VOC | 2-Chloro-1,1,1-trifluoroethane | 1.9 U | 1.9 | 9.3 | 10 | µg/kg | | N |

APPENDIX E-2

**Analytical Data 2015 Biovent Sampling**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | SL | Units | Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1295 | BVBS1295S005 | N | 10 Apr 2015 | 2.5 - 4 | SW8260B | VOC | 2-Chloroethyl vinyl ether | 1.9 U | 1.9 | 9.3 | 10 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S005 | N | 10 Apr 2015 | 2.5 - 4 | SW8260B | VOC | 2-Chlorotoluene | 0.93 U | 0.93 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S005 | N | 10 Apr 2015 | 2.5 - 4 | SW8260B | VOC | 2-Hexanone | 4.7 U | 4.7 | 9.3 | 10 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S005 | N | 10 Apr 2015 | 2.5 - 4 | SW8260B | VOC | 4-Chlorotoluene | 0.93 U | 0.93 | 9.3 | 10 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S005 | N | 10 Apr 2015 | 2.5 - 4 | SW8260B | VOC | 4-Methyl-2-pentanone (MIBK) | 4.7 U | 4.7 | 9.3 | 10 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S005 | N | 10 Apr 2015 | 2.5 - 4 | SW8260B | VOC | Acetone | 23 = | 4.7 | 19 | 20 | µg/kg | X | Y |
| SO | BVBS1295 | BVBS1295S005 | N | 10 Apr 2015 | 2.5 - 4 | SW8260B | VOC | Benzene | 0.93 U | 0.93 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S005 | N | 10 Apr 2015 | 2.5 - 4 | SW8260B | VOC | Bromobenzene | 0.93 U | 0.93 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S005 | N | 10 Apr 2015 | 2.5 - 4 | SW8260B | VOC | Bromochloromethane | 0.93 U | 0.93 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S005 | N | 10 Apr 2015 | 2.5 - 4 | SW8260B | VOC | Bromodichloromethane | 0.93 U | 0.93 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S005 | N | 10 Apr 2015 | 2.5 - 4 | SW8260B | VOC | Bromoform | 1.9 U | 1.9 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S005 | N | 10 Apr 2015 | 2.5 - 4 | SW8260B | VOC | Bromomethane | 1.9 U | 1.9 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S005 | N | 10 Apr 2015 | 2.5 - 4 | SW8260B | VOC | Carbon tetrachloride | 0.93 U | 0.93 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S005 | N | 10 Apr 2015 | 2.5 - 4 | SW8260B | VOC | Chlorobenzene | 0.93 U | 0.93 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S005 | N | 10 Apr 2015 | 2.5 - 4 | SW8260B | VOC | Chloroethane | 1.9 U | 1.9 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S005 | N | 10 Apr 2015 | 2.5 - 4 | SW8260B | VOC | Chloromethane | 1.9 U | 1.9 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S005 | N | 10 Apr 2015 | 2.5 - 4 | SW8260B | VOC | Chlorotrifluoroethylene | 1.9 U | 1.9 | 9.3 | 10 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S005 | N | 10 Apr 2015 | 2.5 - 4 | SW8260B | VOC | cis-1,2-Dichloroethene | 0.93 U | 0.93 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S005 | N | 10 Apr 2015 | 2.5 - 4 | SW8260B | VOC | cis-1,3-Dichloropropene | 0.93 U | 0.93 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S005 | N | 10 Apr 2015 | 2.5 - 4 | SW8260B | VOC | Dibromochloromethane | 0.93 U | 0.93 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S005 | N | 10 Apr 2015 | 2.5 - 4 | SW8260B | VOC | Dibromomethane | 0.93 U | 0.93 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S005 | N | 10 Apr 2015 | 2.5 - 4 | SW8260B | VOC | Dichlorodifluoromethane | 1.9 U | 1.9 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S005 | N | 10 Apr 2015 | 2.5 - 4 | SW8260B | VOC | Ethylbenzene | 0.93 U | 0.93 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S005 | N | 10 Apr 2015 | 2.5 - 4 | SW8260B | VOC | Hexachlorobutadiene | 1.9 U | 1.9 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S005 | N | 10 Apr 2015 | 2.5 - 4 | SW8260B | VOC | Isopropylbenzene | 0.93 U | 0.93 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S005 | N | 10 Apr 2015 | 2.5 - 4 | SW8260B | VOC | m,p-Xylenes | 1.9 U | 1.9 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S005 | N | 10 Apr 2015 | 2.5 - 4 | SW8260B | VOC | Methylene chloride | 3.1 J | 1.9 | 9.3 | 10 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S005 | N | 10 Apr 2015 | 2.5 - 4 | SW8260B | VOC | Methyl-tert-butyl Ether (MTBE) | 0.93 U | 0.93 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S005 | N | 10 Apr 2015 | 2.5 - 4 | SW8260B | VOC | n-butylbenzene | 0.93 U | 0.93 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S005 | N | 10 Apr 2015 | 2.5 - 4 | SW8260B | VOC | n-Propylbenzene | 0.93 U | 0.93 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S005 | N | 10 Apr 2015 | 2.5 - 4 | SW8260B | VOC | o-Xylene | 0.93 U | 0.93 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S005 | N | 10 Apr 2015 | 2.5 - 4 | SW8260B | VOC | p-Isopropyltoluene | 0.93 U | 0.93 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S005 | N | 10 Apr 2015 | 2.5 - 4 | SW8260B | VOC | sec-Butylbenzene | 0.93 U | 0.93 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S005 | N | 10 Apr 2015 | 2.5 - 4 | SW8260B | VOC | Styrene | 0.93 U | 0.93 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S005 | N | 10 Apr 2015 | 2.5 - 4 | SW8260B | VOC | tert-Butanol (TBA) | 9.3 U | 9.3 | 47 | | µg/kg | | NC |
| SO | BVBS1295 | BVBS1295S005 | N | 10 Apr 2015 | 2.5 - 4 | SW8260B | VOC | tert-Butylbenzene | 0.93 U | 0.93 | 4.7 | 5 | µg/kg | | N |

APPENDIX E-2

**Analytical Data 2015 Biovent Sampling**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | SL | Units | Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1295 | BVBS1295S005 | N | 10 Apr 2015 | 2.5 - 4 | SW8260B | VOC | Tetrachloroethene | 0.93 U | 0.93 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S005 | N | 10 Apr 2015 | 2.5 - 4 | SW8260B | VOC | Toluene | 1.1 J | 0.93 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S005 | N | 10 Apr 2015 | 2.5 - 4 | SW8260B | VOC | trans-1,2-Dichloroethene | 0.93 U | 0.93 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S005 | N | 10 Apr 2015 | 2.5 - 4 | SW8260B | VOC | trans-1,3-Dichloropropene | 0.93 U | 0.93 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S005 | N | 10 Apr 2015 | 2.5 - 4 | SW8260B | VOC | Trichloroethene | 0.93 U | 0.93 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S005 | N | 10 Apr 2015 | 2.5 - 4 | SW8260B | VOC | Trichlorofluoromethane | 1.9 U | 1.9 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S005 | N | 10 Apr 2015 | 2.5 - 4 | SW8260B | VOC | Trichloromethane (Chloroform) | 0.93 U | 0.93 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S005 | N | 10 Apr 2015 | 2.5 - 4 | SW8260B | VOC | Vinyl chloride | 1.9 U | 1.9 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S005SP | FS | 10 Apr 2015 | 2.5 - 4 | SW9045D | GENCHEM | pH | 6.41 = | | | | pH units | | NC |
| SO | BVBS1295 | BVBS1295S005SP | FS | 10 Apr 2015 | 2.5 - 4 | SW8015B | HC | Diesel Range Organics (C12-C14) | 270000 J | 1300 | 5200 | 5000 | µg/kg | X | Y |
| SO | BVBS1295 | BVBS1295S005SP | FS | 10 Apr 2015 | 2.5 - 4 | SW8015B | HC | Diesel Range Organics (C15-C20) | 95000 J | 1300 | 5200 | 5000 | µg/kg | X | Y |
| SO | BVBS1295 | BVBS1295S005SP | FS | 10 Apr 2015 | 2.5 - 4 | SW8015B | HC | Diesel Range Organics (C21-C30) | 15000 J | 1300 | 5200 | 5000 | µg/kg | X | Y |
| SO | BVBS1295 | BVBS1295S005SP | FS | 10 Apr 2015 | 2.5 - 4 | SW8015B | HC | Diesel Range Organics (C8-C11) | 40000 J | 1300 | 5200 | 1000 | µg/kg | X | Y |
| SO | BVBS1295 | BVBS1295S005SP | FS | 10 Apr 2015 | 2.5 - 4 | SW8015B | HC | GRO (C4-C12) | 540000 = | 5300 | 21000 | 1000 | µg/kg | X | Y |
| SO | BVBS1295 | BVBS1295S005SP | FS | 10 Apr 2015 | 2.5 - 4 | SW8015B | HC | ORO (C31-C40) | 2800 J | 1300 | 5200 | 10000 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S005SP | FS | 10 Apr 2015 | 2.5 - 4 | SW8270C-SIM | PAH | 1-Methylnaphthalene | 11 UJ | 4.3 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1295 | BVBS1295S005SP | FS | 10 Apr 2015 | 2.5 - 4 | SW8270C-SIM | PAH | 2-Methylnaphthalene | 11 UJ | 4.8 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1295 | BVBS1295S005SP | FS | 10 Apr 2015 | 2.5 - 4 | SW8270C-SIM | PAH | Acenaphthene | 7.6 J | 4.9 | 11 | 2.5 | µg/kg | X | Y |
| SO | BVBS1295 | BVBS1295S005SP | FS | 10 Apr 2015 | 2.5 - 4 | SW8270C-SIM | PAH | Acenaphthylene | 11 UJ | 4.8 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1295 | BVBS1295S005SP | FS | 10 Apr 2015 | 2.5 - 4 | SW8270C-SIM | PAH | Anthracene | 10 J | 5.3 | 11 | 2.5 | µg/kg | X | Y |
| SO | BVBS1295 | BVBS1295S005SP | FS | 10 Apr 2015 | 2.5 - 4 | SW8270C-SIM | PAH | Benzo(a)anthracene | 16 J | 4.7 | 11 | | µg/kg | | NC |
| SO | BVBS1295 | BVBS1295S005SP | FS | 10 Apr 2015 | 2.5 - 4 | SW8270C-SIM | PAH | Benzo(a)pyrene | 17 = | 5 | 11 | | µg/kg | | NC |
| SO | BVBS1295 | BVBS1295S005SP | FS | 10 Apr 2015 | 2.5 - 4 | SW8270C-SIM | PAH | Benzo(b)fluoranthene | 16 J | 5.2 | 11 | | µg/kg | | NC |
| SO | BVBS1295 | BVBS1295S005SP | FS | 10 Apr 2015 | 2.5 - 4 | SW8270C-SIM | PAH | Benzo(ghi)perylene | 43 = | 5.1 | 11 | 2.5 | µg/kg | X | Y |
| SO | BVBS1295 | BVBS1295S005SP | FS | 10 Apr 2015 | 2.5 - 4 | SW8270C-SIM | PAH | Benzo(k)fluoranthene | 22 J | 5.1 | 11 | | µg/kg | | NC |
| SO | BVBS1295 | BVBS1295S005SP | FS | 10 Apr 2015 | 2.5 - 4 | SW8270C-SIM | PAH | Chrysene | 21 = | 4.4 | 11 | | µg/kg | | NC |
| SO | BVBS1295 | BVBS1295S005SP | FS | 10 Apr 2015 | 2.5 - 4 | SW8270C-SIM | PAH | Dibenzo(a,h)anthracene | 11 U | 4.9 | 11 | | µg/kg | | NC |
| SO | BVBS1295 | BVBS1295S005SP | FS | 10 Apr 2015 | 2.5 - 4 | SW8270C-SIM | PAH | Fluoranthene | 87 J | 5.2 | 11 | 5.2 | µg/kg | X | Y |
| SO | BVBS1295 | BVBS1295S005SP | FS | 10 Apr 2015 | 2.5 - 4 | SW8270C-SIM | PAH | Fluorene | 7.1 J | 5.2 | 11 | 3.8 | µg/kg | X | Y |
| SO | BVBS1295 | BVBS1295S005SP | FS | 10 Apr 2015 | 2.5 - 4 | SW8270C-SIM | PAH | Indeno(1,2,3-cd)pyrene | 28 J | 6.6 | 11 | | µg/kg | | NC |
| SO | BVBS1295 | BVBS1295S005SP | FS | 10 Apr 2015 | 2.5 - 4 | SW8270C-SIM | PAH | Naphthalene | 11 UJ | 4.4 | 11 | 3.6 | µg/kg | X | RL |
| SO | BVBS1295 | BVBS1295S005SP | FS | 10 Apr 2015 | 2.5 - 4 | SW8270C-SIM | PAH | PAHTEQM | 25.41 = | | | 4.47 | µg/kg | X | Y |
| SO | BVBS1295 | BVBS1295S005SP | FS | 10 Apr 2015 | 2.5 - 4 | SW8270C-SIM | PAH | Phenanthrene | 26 J | 5.2 | 11 | 3.9 | µg/kg | X | Y |
| SO | BVBS1295 | BVBS1295S005SP | FS | 10 Apr 2015 | 2.5 - 4 | SW8270C-SIM | PAH | Pyrene | 130 J | 4.5 | 11 | 5.6 | µg/kg | X | Y |
| SO | BVBS1295 | BVBS1295S005SP | FS | 10 Apr 2015 | 2.5 - 4 | SW8270C-SIM | PHTH | Bis(2-ethylhexyl)phthalate | 580 J | 5.7 | 11 | 61 | µg/kg | X | Y |
| SO | BVBS1295 | BVBS1295S005SP | FS | 10 Apr 2015 | 2.5 - 4 | SW8270C-SIM | PHTH | Butyl benzyl phthalate | 11 U | 5.1 | 11 | 100 | µg/kg | | N |

APPENDIX E-2

**Analytical Data 2015 Biovent Sampling**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | SL | Units | Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1295 | BVBS1295S005SP | FS | 10 Apr 2015 | 2.5 - 4 | SW8270C-SIM | PHTH | Diethyl phthalate | 8.2 J | 5.8 | 11 | 27 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S005SP | FS | 10 Apr 2015 | 2.5 - 4 | SW8270C-SIM | PHTH | Dimethyl phthalate | 42 J | 4 | 11 | 27 | µg/kg | X | Y |
| SO | BVBS1295 | BVBS1295S005SP | FS | 10 Apr 2015 | 2.5 - 4 | SW8270C-SIM | PHTH | Di-n-butyl phthalate | 530 U | 140 | 530 | 27 | µg/kg | X | RL |
| SO | BVBS1295 | BVBS1295S005SP | FS | 10 Apr 2015 | 2.5 - 4 | SW8270C-SIM | PHTH | Di-n-octyl phthalate | 11 U | 5 | 11 | 27 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S005SP | FS | 10 Apr 2015 | 2.5 - 4 | SW8270C-SIM | SVOC | n-Nitrosodimethylamine | 11 UJ | 5.8 | 11 | 10 | µg/kg | X | N |
| SO | BVBS1295 | BVBS1295S005SP | FS | 10 Apr 2015 | 2.5 - 4 | SW8260B | VOC | 1,1,1,2-Tetrachloroethane | 0.24 U | 0.24 | 5 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S005SP | FS | 10 Apr 2015 | 2.5 - 4 | SW8260B | VOC | 1,1,1-Trichloroethane | 0.23 U | 0.23 | 5 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S005SP | FS | 10 Apr 2015 | 2.5 - 4 | SW8260B | VOC | 1,1,2,2-Tetrachloroethane | 0.35 U | 0.35 | 20 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S005SP | FS | 10 Apr 2015 | 2.5 - 4 | SW8260B | VOC | 1,1,2-Trichloro-1,2,2-trifluoroethane | 0.35 U | 0.35 | 5 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S005SP | FS | 10 Apr 2015 | 2.5 - 4 | SW8260B | VOC | 1,1,2-Trichloroethane | 0.36 U | 0.36 | 5 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S005SP | FS | 10 Apr 2015 | 2.5 - 4 | SW8260B | VOC | 1,1-Dichloroethane | 0.21 U | 0.21 | 5 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S005SP | FS | 10 Apr 2015 | 2.5 - 4 | SW8260B | VOC | 1,1-Dichloroethene | 0.35 U | 0.35 | 5 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S005SP | FS | 10 Apr 2015 | 2.5 - 4 | SW8260B | VOC | 1,1-Dichloropropene | 0.33 U | 0.33 | 5 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S005SP | FS | 10 Apr 2015 | 2.5 - 4 | SW8260B | VOC | 1,2,3-Trichlorobenzene | 0.92 U | 0.92 | 20 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S005SP | FS | 10 Apr 2015 | 2.5 - 4 | SW8260B | VOC | 1,2,3-Trichloropropane | 0.83 U | 0.83 | 5 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S005SP | FS | 10 Apr 2015 | 2.5 - 4 | SW8260B | VOC | 1,2,4-Trichlorobenzene | 0.31 U | 0.31 | 20 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S005SP | FS | 10 Apr 2015 | 2.5 - 4 | SW8260B | VOC | 1,2,4-Trimethylbenzene | 0.59 U | 0.59 | 10 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S005SP | FS | 10 Apr 2015 | 2.5 - 4 | SW8260B | VOC | 1,2-Dibromo-3-chloropropane | 1.7 U | 1.7 | 10 | 10 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S005SP | FS | 10 Apr 2015 | 2.5 - 4 | SW8260B | VOC | 1,2-Dibromoethane (EDB) | 0.26 U | 0.26 | 10 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S005SP | FS | 10 Apr 2015 | 2.5 - 4 | SW8260B | VOC | 1,2-Dichlorobenzene | 0.23 U | 0.23 | 5 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S005SP | FS | 10 Apr 2015 | 2.5 - 4 | SW8260B | VOC | 1,2-Dichloroethane | 0.32 U | 0.32 | 5 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S005SP | FS | 10 Apr 2015 | 2.5 - 4 | SW8260B | VOC | 1,2-Dichloropropane | 0.44 U | 0.44 | 5 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S005SP | FS | 10 Apr 2015 | 2.5 - 4 | SW8260B | VOC | 1,3,5-Trimethylbenzene | 0.55 U | 0.55 | 10 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S005SP | FS | 10 Apr 2015 | 2.5 - 4 | SW8260B | VOC | 1,3-Dichlorobenzene | 0.18 U | 0.18 | 5 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S005SP | FS | 10 Apr 2015 | 2.5 - 4 | SW8260B | VOC | 1,3-Dichloropropane | 0.25 U | 0.25 | 5 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S005SP | FS | 10 Apr 2015 | 2.5 - 4 | SW8260B | VOC | 1,4-Dichlorobenzene | 0.22 U | 0.22 | 5 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S005SP | FS | 10 Apr 2015 | 2.5 - 4 | SW8260B | VOC | 2-Butanone (MEK) | 3.8 U | 3.8 | 10 | 20 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S005SP | FS | 10 Apr 2015 | 2.5 - 4 | SW8260B | VOC | 2-Chloro-1,1,1-trifluoroethane | 0.62 U | 0.62 | 5 | 10 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S005SP | FS | 10 Apr 2015 | 2.5 - 4 | SW8260B | VOC | 2-Chloroethyl vinyl ether | 8.4 U | 8.4 | 50 | 10 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S005SP | FS | 10 Apr 2015 | 2.5 - 4 | SW8260B | VOC | 2-Chlorotoluene | 0.23 U | 0.23 | 10 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S005SP | FS | 10 Apr 2015 | 2.5 - 4 | SW8260B | VOC | 2-Hexanone | 1.8 U | 1.8 | 10 | 10 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S005SP | FS | 10 Apr 2015 | 2.5 - 4 | SW8260B | VOC | 4-Chlorotoluene | 0.21 U | 0.21 | 10 | 10 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S005SP | FS | 10 Apr 2015 | 2.5 - 4 | SW8260B | VOC | 4-Methyl-2-pentanone (MIBK) | 4.3 U | 4.3 | 10 | 10 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S005SP | FS | 10 Apr 2015 | 2.5 - 4 | SW8260B | VOC | Acetone | 15 J | 6.3 | 20 | 20 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S005SP | FS | 10 Apr 2015 | 2.5 - 4 | SW8260B | VOC | Benzene | 0.13 U | 0.13 | 0.5 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S005SP | FS | 10 Apr 2015 | 2.5 - 4 | SW8260B | VOC | Bromobenzene | 0.21 U | 0.21 | 20 | 5 | µg/kg | | N |

APPENDIX E-2

**Analytical Data 2015 Biovent Sampling**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | SL | Units | Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1295 | BVBS1295S005SP | FS | 10 Apr 2015 | 2.5 - 4 | SW8260B | VOC | Bromochloromethane | 0.69 U | 0.69 | 5 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S005SP | FS | 10 Apr 2015 | 2.5 - 4 | SW8260B | VOC | Bromodichloromethane | 0.23 U | 0.23 | 5 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S005SP | FS | 10 Apr 2015 | 2.5 - 4 | SW8260B | VOC | Bromoform | 0.8 U | 0.8 | 10 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S005SP | FS | 10 Apr 2015 | 2.5 - 4 | SW8260B | VOC | Bromomethane | 9.5 UJ | 9.5 | 20 | 5 | µg/kg | X | RL |
| SO | BVBS1295 | BVBS1295S005SP | FS | 10 Apr 2015 | 2.5 - 4 | SW8260B | VOC | Carbon tetrachloride | 0.28 U | 0.28 | 5 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S005SP | FS | 10 Apr 2015 | 2.5 - 4 | SW8260B | VOC | Chlorobenzene | 0.22 U | 0.22 | 5 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S005SP | FS | 10 Apr 2015 | 2.5 - 4 | SW8260B | VOC | Chloroethane | 1.5 U | 1.5 | 10 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S005SP | FS | 10 Apr 2015 | 2.5 - 4 | SW8260B | VOC | Chloromethane | 0.31 U | 0.31 | 10 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S005SP | FS | 10 Apr 2015 | 2.5 - 4 | SW8260B | VOC | Chlorotrifluoroethylene | 1.2 U | 1.2 | 5 | 10 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S005SP | FS | 10 Apr 2015 | 2.5 - 4 | SW8260B | VOC | cis-1,2-Dichloroethene | 0.28 U | 0.28 | 5 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S005SP | FS | 10 Apr 2015 | 2.5 - 4 | SW8260B | VOC | cis-1,3-Dichloropropene | 0.26 U | 0.26 | 5 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S005SP | FS | 10 Apr 2015 | 2.5 - 4 | SW8260B | VOC | Dibromochloromethane | 0.57 U | 0.57 | 10 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S005SP | FS | 10 Apr 2015 | 2.5 - 4 | SW8260B | VOC | Dibromomethane | 0.78 U | 0.78 | 5 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S005SP | FS | 10 Apr 2015 | 2.5 - 4 | SW8260B | VOC | Dichlorodifluoromethane | 0.45 U | 0.45 | 10 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S005SP | FS | 10 Apr 2015 | 2.5 - 4 | SW8260B | VOC | Ethylbenzene | 0.15 U | 0.15 | 10 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S005SP | FS | 10 Apr 2015 | 2.5 - 4 | SW8260B | VOC | Hexachlorobutadiene | 0.32 U | 0.32 | 20 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S005SP | FS | 10 Apr 2015 | 2.5 - 4 | SW8260B | VOC | Isopropylbenzene | 0.55 U | 0.55 | 10 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S005SP | FS | 10 Apr 2015 | 2.5 - 4 | SW8260B | VOC | m,p-Xylenes | 0.27 U | 0.27 | 20 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S005SP | FS | 10 Apr 2015 | 2.5 - 4 | SW8260B | VOC | Methylene chloride | 1.3 U | 1.3 | 5 | 10 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S005SP | FS | 10 Apr 2015 | 2.5 - 4 | SW8260B | VOC | Methyl-tert-butyl Ether (MTBE) | 0.3 U | 0.3 | 5 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S005SP | FS | 10 Apr 2015 | 2.5 - 4 | SW8260B | VOC | n-butylbenzene | 0.16 U | 0.16 | 20 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S005SP | FS | 10 Apr 2015 | 2.5 - 4 | SW8260B | VOC | n-Propylbenzene | 0.5 U | 0.5 | 10 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S005SP | FS | 10 Apr 2015 | 2.5 - 4 | SW8260B | VOC | o-Xylene | 0.56 U | 0.56 | 10 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S005SP | FS | 10 Apr 2015 | 2.5 - 4 | SW8260B | VOC | p-Isopropyltoluene | 0.63 U | 0.63 | 20 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S005SP | FS | 10 Apr 2015 | 2.5 - 4 | SW8260B | VOC | sec-Butylbenzene | 0.58 U | 0.58 | 20 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S005SP | FS | 10 Apr 2015 | 2.5 - 4 | SW8260B | VOC | Styrene | 0.61 U | 0.61 | 20 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S005SP | FS | 10 Apr 2015 | 2.5 - 4 | SW8260B | VOC | tert-Butylbenzene | 0.15 U | 0.15 | 20 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S005SP | FS | 10 Apr 2015 | 2.5 - 4 | SW8260B | VOC | Tetrachloroethene | 0.21 U | 0.21 | 5 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S005SP | FS | 10 Apr 2015 | 2.5 - 4 | SW8260B | VOC | Toluene | 0.52 U | 0.52 | 5 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S005SP | FS | 10 Apr 2015 | 2.5 - 4 | SW8260B | VOC | trans-1,2-Dichloroethene | 0.51 U | 0.51 | 5 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S005SP | FS | 10 Apr 2015 | 2.5 - 4 | SW8260B | VOC | trans-1,3-Dichloropropene | 0.61 U | 0.61 | 10 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S005SP | FS | 10 Apr 2015 | 2.5 - 4 | SW8260B | VOC | Trichloroethene | 0.3 U | 0.3 | 5 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S005SP | FS | 10 Apr 2015 | 2.5 - 4 | SW8260B | VOC | Trichlorofluoromethane | 0.38 U | 0.38 | 5 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S005SP | FS | 10 Apr 2015 | 2.5 - 4 | SW8260B | VOC | Trichloromethane (Chloroform) | 0.24 U | 0.24 | 5 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S005SP | FS | 10 Apr 2015 | 2.5 - 4 | SW8260B | VOC | Vinyl chloride | 0.5 U | 0.5 | 10 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S006 | N | 10 Apr 2015 | 5.5 - 8 | SW9045D | GENCHEM | pH | 7.78 = | | | | pH units | | NC |

APPENDIX E-2

**Analytical Data 2015 Biovent Sampling**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | SL | Units | Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1295 | BVBS1295S006 | N | 10 Apr 2015 | 5.5 - 8 | M8015D | HC | Diesel Range Organics (C12-C14) | 5300 U | 2700 | 5300 | 5000 | µg/kg | X | N |
| SO | BVBS1295 | BVBS1295S006 | N | 10 Apr 2015 | 5.5 - 8 | M8015D | HC | Diesel Range Organics (C15-C20) | 14000 J | 2700 | 5300 | 5000 | µg/kg | X | Y |
| SO | BVBS1295 | BVBS1295S006 | N | 10 Apr 2015 | 5.5 - 8 | M8015D | HC | Diesel Range Organics (C21-C30) | 5300 U | 2700 | 5300 | 5000 | µg/kg | X | N |
| SO | BVBS1295 | BVBS1295S006 | N | 10 Apr 2015 | 5.5 - 8 | M8015D | HC | Diesel Range Organics (C8-C11) | 5300 U | 2700 | 5300 | 1000 | µg/kg | X | RL |
| SO | BVBS1295 | BVBS1295S006 | N | 10 Apr 2015 | 5.5 - 8 | SW8015B | HC | GRO (C4-C12) | 7900 = | 460 | 920 | 1000 | µg/kg | X | Y |
| SO | BVBS1295 | BVBS1295S006 | N | 10 Apr 2015 | 5.5 - 8 | M8015D | HC | ORO (C31-C40) | 11000 U | 5300 | 11000 | 10000 | µg/kg | X | N |
| SO | BVBS1295 | BVBS1295S006 | N | 10 Apr 2015 | 5.5 - 8 | M8015D | HC | TOTAL EFH(C8-C40) | 17000 U | 2700 | 5300 | 10000 | µg/kg | X | N |
| SO | BVBS1295 | BVBS1295S006 | N | 10 Apr 2015 | 5.5 - 8 | SW8270C-SIM | PAH | 1-Methylnaphthalene | 11 U | 5.3 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1295 | BVBS1295S006 | N | 10 Apr 2015 | 5.5 - 8 | SW8270C-SIM | PAH | 2-Methylnaphthalene | 11 U | 5.3 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1295 | BVBS1295S006 | N | 10 Apr 2015 | 5.5 - 8 | SW8270C-SIM | PAH | Acenaphthene | 11 U | 5.3 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1295 | BVBS1295S006 | N | 10 Apr 2015 | 5.5 - 8 | SW8270C-SIM | PAH | Acenaphthylene | 11 U | 5.3 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1295 | BVBS1295S006 | N | 10 Apr 2015 | 5.5 - 8 | SW8270C-SIM | PAH | Anthracene | 11 U | 5.3 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1295 | BVBS1295S006 | N | 10 Apr 2015 | 5.5 - 8 | SW8270C-SIM | PAH | Benzo(a)anthracene | 11 U | 5.3 | 11 | | µg/kg | | NC |
| SO | BVBS1295 | BVBS1295S006 | N | 10 Apr 2015 | 5.5 - 8 | SW8270C-SIM | PAH | Benzo(a)pyrene | 11 U | 5.3 | 11 | | µg/kg | | NC |
| SO | BVBS1295 | BVBS1295S006 | N | 10 Apr 2015 | 5.5 - 8 | SW8270C-SIM | PAH | Benzo(b)fluoranthene | 11 U | 5.3 | 11 | | µg/kg | | NC |
| SO | BVBS1295 | BVBS1295S006 | N | 10 Apr 2015 | 5.5 - 8 | SW8270C-SIM | PAH | Benzo(ghi)perylene | 11 U | 5.3 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1295 | BVBS1295S006 | N | 10 Apr 2015 | 5.5 - 8 | SW8270C-SIM | PAH | Benzo(k)fluoranthene | 11 U | 5.3 | 11 | | µg/kg | | NC |
| SO | BVBS1295 | BVBS1295S006 | N | 10 Apr 2015 | 5.5 - 8 | SW8270C-SIM | PAH | Chrysene | 11 U | 5.3 | 11 | | µg/kg | | NC |
| SO | BVBS1295 | BVBS1295S006 | N | 10 Apr 2015 | 5.5 - 8 | SW8270C-SIM | PAH | Dibenzo(a,h)anthracene | 11 U | 5.3 | 11 | | µg/kg | | NC |
| SO | BVBS1295 | BVBS1295S006 | N | 10 Apr 2015 | 5.5 - 8 | SW8270C-SIM | PAH | Fluoranthene | 11 U | 5.3 | 11 | 5.2 | µg/kg | X | RL |
| SO | BVBS1295 | BVBS1295S006 | N | 10 Apr 2015 | 5.5 - 8 | SW8270C-SIM | PAH | Fluorene | 11 U | 5.3 | 11 | 3.8 | µg/kg | X | RL |
| SO | BVBS1295 | BVBS1295S006 | N | 10 Apr 2015 | 5.5 - 8 | SW8270C-SIM | PAH | Indeno(1,2,3-cd)pyrene | 11 U | 5.3 | 11 | | µg/kg | | NC |
| SO | BVBS1295 | BVBS1295S006 | N | 10 Apr 2015 | 5.5 - 8 | SW8270C-SIM | PAH | Naphthalene | 11 U | 5.3 | 11 | 3.6 | µg/kg | X | RL |
| SO | BVBS1295 | BVBS1295S006 | N | 10 Apr 2015 | 5.5 - 8 | SW8270C-SIM | PAH | PAHTEQM | 0 U | | | 4.47 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S006 | N | 10 Apr 2015 | 5.5 - 8 | SW8270C-SIM | PAH | Phenanthrene | 11 U | 5.3 | 11 | 3.9 | µg/kg | X | RL |
| SO | BVBS1295 | BVBS1295S006 | N | 10 Apr 2015 | 5.5 - 8 | SW8270C-SIM | PAH | Pyrene | 11 U | 5.3 | 11 | 5.6 | µg/kg | X | N |
| SO | BVBS1295 | BVBS1295S006 | N | 10 Apr 2015 | 5.5 - 8 | SW8270C-SIM | PHTH | Bis(2-ethylhexyl)phthalate | 21 U | 11 | 21 | 61 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S006 | N | 10 Apr 2015 | 5.5 - 8 | SW8270C-SIM | PHTH | Butyl benzyl phthalate | 21 U | 11 | 21 | 100 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S006 | N | 10 Apr 2015 | 5.5 - 8 | SW8270C-SIM | PHTH | Diethyl phthalate | 21 U | 11 | 21 | 27 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S006 | N | 10 Apr 2015 | 5.5 - 8 | SW8270C-SIM | PHTH | Dimethyl phthalate | 21 U | 11 | 21 | 27 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S006 | N | 10 Apr 2015 | 5.5 - 8 | SW8270C-SIM | PHTH | Di-n-butyl phthalate | 21 U | 11 | 21 | 27 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S006 | N | 10 Apr 2015 | 5.5 - 8 | SW8270C-SIM | PHTH | Di-n-octyl phthalate | 21 U | 11 | 21 | 27 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S006 | N | 10 Apr 2015 | 5.5 - 8 | SW8260B | SVOC | Diisopropyl ether | 0.95 U | 0.95 | 9.5 | 10 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S006 | N | 10 Apr 2015 | 5.5 - 8 | SW8270C-SIM | SVOC | n-Nitrosodimethylamine | 21 U | 11 | 21 | 10 | µg/kg | X | RL |
| SO | BVBS1295 | BVBS1295S006 | N | 10 Apr 2015 | 5.5 - 8 | SW8260B | SVOC | tert-Amyl methyl ether | 0.95 U | 0.95 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S006 | N | 10 Apr 2015 | 5.5 - 8 | SW8260B | SVOC | tert-Butyl ethyl ether | 0.95 U | 0.95 | 4.8 | 5 | µg/kg | | N |

APPENDIX E-2

**Analytical Data 2015 Biovent Sampling**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | SL | Units | Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1295 | BVBS1295S006 | N | 10 Apr 2015 | 5.5 - 8 | SW8260B | VOC | 1,1,1,2-Tetrachloroethane | 0.95 U | 0.95 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S006 | N | 10 Apr 2015 | 5.5 - 8 | SW8260B | VOC | 1,1,1-Trichloroethane | 0.95 U | 0.95 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S006 | N | 10 Apr 2015 | 5.5 - 8 | SW8260B | VOC | 1,1,2,2-Tetrachloroethane | 0.95 U | 0.95 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S006 | N | 10 Apr 2015 | 5.5 - 8 | SW8260B | VOC | 1,1,2-Trichloro-1,2,2-trifluoroethane | 1.9 U | 1.9 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S006 | N | 10 Apr 2015 | 5.5 - 8 | SW8260B | VOC | 1,1,2-Trichloroethane | 0.95 U | 0.95 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S006 | N | 10 Apr 2015 | 5.5 - 8 | SW8260B | VOC | 1,1-Dichloroethane | 0.95 U | 0.95 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S006 | N | 10 Apr 2015 | 5.5 - 8 | SW8260B | VOC | 1,1-Dichloroethene | 0.95 U | 0.95 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S006 | N | 10 Apr 2015 | 5.5 - 8 | SW8260B | VOC | 1,1-Dichloropropene | 0.95 U | 0.95 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S006 | N | 10 Apr 2015 | 5.5 - 8 | SW8260B | VOC | 1,2,3-Trichlorobenzene | 1.9 U | 1.9 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S006 | N | 10 Apr 2015 | 5.5 - 8 | SW8260B | VOC | 1,2,3-Trichloropropane | 1.9 U | 1.9 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S006 | N | 10 Apr 2015 | 5.5 - 8 | SW8260B | VOC | 1,2,4-Trichlorobenzene | 1.9 U | 1.9 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S006 | N | 10 Apr 2015 | 5.5 - 8 | SW8260B | VOC | 1,2,4-Trimethylbenzene | 0.95 U | 0.95 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S006 | N | 10 Apr 2015 | 5.5 - 8 | SW8260B | VOC | 1,2-Dibromo-3-chloropropane | 1.9 U | 1.9 | 9.5 | 10 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S006 | N | 10 Apr 2015 | 5.5 - 8 | SW8260B | VOC | 1,2-Dibromoethane (EDB) | 0.95 U | 0.95 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S006 | N | 10 Apr 2015 | 5.5 - 8 | SW8260B | VOC | 1,2-Dichlorobenzene | 0.95 U | 0.95 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S006 | N | 10 Apr 2015 | 5.5 - 8 | SW8260B | VOC | 1,2-Dichloroethane | 0.95 U | 0.95 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S006 | N | 10 Apr 2015 | 5.5 - 8 | SW8260B | VOC | 1,2-Dichloropropane | 0.95 U | 0.95 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S006 | N | 10 Apr 2015 | 5.5 - 8 | SW8260B | VOC | 1,3,5-Trimethylbenzene | 0.95 U | 0.95 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S006 | N | 10 Apr 2015 | 5.5 - 8 | SW8260B | VOC | 1,3-Dichlorobenzene | 0.95 U | 0.95 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S006 | N | 10 Apr 2015 | 5.5 - 8 | SW8260B | VOC | 1,3-Dichloropropane | 0.95 U | 0.95 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S006 | N | 10 Apr 2015 | 5.5 - 8 | SW8260B | VOC | 1,4-Dichlorobenzene | 0.95 U | 0.95 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S006 | N | 10 Apr 2015 | 5.5 - 8 | SW8260B | VOC | 2,2-Dichloropropane | 1.9 U | 1.9 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S006 | N | 10 Apr 2015 | 5.5 - 8 | SW8260B | VOC | 2-Butanone (MEK) | 4.8 U | 4.8 | 19 | 20 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S006 | N | 10 Apr 2015 | 5.5 - 8 | SW8260B | VOC | 2-Chloro-1,1,1-trifluoroethane | 1.9 U | 1.9 | 9.5 | 10 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S006 | N | 10 Apr 2015 | 5.5 - 8 | SW8260B | VOC | 2-Chloroethyl vinyl ether | 1.9 U | 1.9 | 9.5 | 10 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S006 | N | 10 Apr 2015 | 5.5 - 8 | SW8260B | VOC | 2-Chlorotoluene | 0.95 U | 0.95 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S006 | N | 10 Apr 2015 | 5.5 - 8 | SW8260B | VOC | 2-Hexanone | 4.8 U | 4.8 | 9.5 | 10 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S006 | N | 10 Apr 2015 | 5.5 - 8 | SW8260B | VOC | 4-Chlorotoluene | 0.95 U | 0.95 | 9.5 | 10 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S006 | N | 10 Apr 2015 | 5.5 - 8 | SW8260B | VOC | 4-Methyl-2-pentanone (MIBK) | 4.8 U | 4.8 | 9.5 | 10 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S006 | N | 10 Apr 2015 | 5.5 - 8 | SW8260B | VOC | Acetone | 4.8 U | 4.8 | 19 | 20 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S006 | N | 10 Apr 2015 | 5.5 - 8 | SW8260B | VOC | Benzene | 0.95 U | 0.95 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S006 | N | 10 Apr 2015 | 5.5 - 8 | SW8260B | VOC | Bromobenzene | 0.95 U | 0.95 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S006 | N | 10 Apr 2015 | 5.5 - 8 | SW8260B | VOC | Bromochloromethane | 0.95 U | 0.95 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S006 | N | 10 Apr 2015 | 5.5 - 8 | SW8260B | VOC | Bromodichloromethane | 0.95 U | 0.95 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S006 | N | 10 Apr 2015 | 5.5 - 8 | SW8260B | VOC | Bromoform | 1.9 U | 1.9 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S006 | N | 10 Apr 2015 | 5.5 - 8 | SW8260B | VOC | Bromomethane | 1.9 U | 1.9 | 4.8 | 5 | µg/kg | | N |

APPENDIX E-2

**Analytical Data 2015 Biovent Sampling**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | SL | Units | Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1295 | BVBS1295S006 | N | 10 Apr 2015 | 5.5 - 8 | SW8260B | VOC | Carbon tetrachloride | 0.95 U | 0.95 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S006 | N | 10 Apr 2015 | 5.5 - 8 | SW8260B | VOC | Chlorobenzene | 0.95 U | 0.95 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S006 | N | 10 Apr 2015 | 5.5 - 8 | SW8260B | VOC | Chloroethane | 1.9 U | 1.9 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S006 | N | 10 Apr 2015 | 5.5 - 8 | SW8260B | VOC | Chloromethane | 1.9 U | 1.9 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S006 | N | 10 Apr 2015 | 5.5 - 8 | SW8260B | VOC | Chlorotrifluoroethylene | 1.9 U | 1.9 | 9.5 | 10 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S006 | N | 10 Apr 2015 | 5.5 - 8 | SW8260B | VOC | cis-1,2-Dichloroethene | 0.95 U | 0.95 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S006 | N | 10 Apr 2015 | 5.5 - 8 | SW8260B | VOC | cis-1,3-Dichloropropene | 0.95 U | 0.95 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S006 | N | 10 Apr 2015 | 5.5 - 8 | SW8260B | VOC | Dibromochloromethane | 0.95 U | 0.95 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S006 | N | 10 Apr 2015 | 5.5 - 8 | SW8260B | VOC | Dibromomethane | 0.95 U | 0.95 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S006 | N | 10 Apr 2015 | 5.5 - 8 | SW8260B | VOC | Dichlorodifluoromethane | 1.9 U | 1.9 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S006 | N | 10 Apr 2015 | 5.5 - 8 | SW8260B | VOC | Ethylbenzene | 0.95 U | 0.95 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S006 | N | 10 Apr 2015 | 5.5 - 8 | SW8260B | VOC | Hexachlorobutadiene | 1.9 U | 1.9 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S006 | N | 10 Apr 2015 | 5.5 - 8 | SW8260B | VOC | Isopropylbenzene | 0.95 U | 0.95 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S006 | N | 10 Apr 2015 | 5.5 - 8 | SW8260B | VOC | m,p-Xylenes | 1.9 U | 1.9 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S006 | N | 10 Apr 2015 | 5.5 - 8 | SW8260B | VOC | Methylene chloride | 1.9 U | 1.9 | 9.5 | 10 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S006 | N | 10 Apr 2015 | 5.5 - 8 | SW8260B | VOC | Methyl-tert-butyl Ether (MTBE) | 0.95 U | 0.95 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S006 | N | 10 Apr 2015 | 5.5 - 8 | SW8260B | VOC | n-butylbenzene | 0.95 U | 0.95 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S006 | N | 10 Apr 2015 | 5.5 - 8 | SW8260B | VOC | n-Propylbenzene | 0.95 U | 0.95 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S006 | N | 10 Apr 2015 | 5.5 - 8 | SW8260B | VOC | o-Xylene | 0.95 U | 0.95 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S006 | N | 10 Apr 2015 | 5.5 - 8 | SW8260B | VOC | p-Isopropyltoluene | 0.95 U | 0.95 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S006 | N | 10 Apr 2015 | 5.5 - 8 | SW8260B | VOC | sec-Butylbenzene | 0.95 U | 0.95 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S006 | N | 10 Apr 2015 | 5.5 - 8 | SW8260B | VOC | Styrene | 0.95 U | 0.95 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S006 | N | 10 Apr 2015 | 5.5 - 8 | SW8260B | VOC | tert-Butanol (TBA) | 9.5 U | 9.5 | 48 | | µg/kg | | NC |
| SO | BVBS1295 | BVBS1295S006 | N | 10 Apr 2015 | 5.5 - 8 | SW8260B | VOC | tert-Butylbenzene | 0.95 U | 0.95 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S006 | N | 10 Apr 2015 | 5.5 - 8 | SW8260B | VOC | Tetrachloroethene | 0.95 U | 0.95 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S006 | N | 10 Apr 2015 | 5.5 - 8 | SW8260B | VOC | Toluene | 0.95 U | 0.95 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S006 | N | 10 Apr 2015 | 5.5 - 8 | SW8260B | VOC | trans-1,2-Dichloroethene | 0.95 U | 0.95 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S006 | N | 10 Apr 2015 | 5.5 - 8 | SW8260B | VOC | trans-1,3-Dichloropropene | 0.95 U | 0.95 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S006 | N | 10 Apr 2015 | 5.5 - 8 | SW8260B | VOC | Trichloroethene | 0.95 U | 0.95 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S006 | N | 10 Apr 2015 | 5.5 - 8 | SW8260B | VOC | Trichlorofluoromethane | 1.9 U | 1.9 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S006 | N | 10 Apr 2015 | 5.5 - 8 | SW8260B | VOC | Trichloromethane (Chloroform) | 0.95 U | 0.95 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S006 | N | 10 Apr 2015 | 5.5 - 8 | SW8260B | VOC | Vinyl chloride | 1.9 U | 1.9 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S001 | N | 4 Feb 2015 | 3 - 4 | Walkley-Black | GENCHEM | Total Organic Carbon | 2880 = | 777 | 777 | | mg/kg | | NC |
| SO | BVBS1296 | BVBS1296S001 | N | 4 Feb 2015 | 3 - 4 | SW8015B | HC | Diesel Range Organics (C12-C14) | 70000 = | 3300 | 6700 | 5000 | µg/kg | X | Y |
| SO | BVBS1296 | BVBS1296S001 | N | 4 Feb 2015 | 3 - 4 | SW8015B | HC | Diesel Range Organics (C15-C20) | 130000 = | 3300 | 6700 | 5000 | µg/kg | X | Y |
| SO | BVBS1296 | BVBS1296S001 | N | 4 Feb 2015 | 3 - 4 | SW8015B | HC | Diesel Range Organics (C21-C30) | 16000 = | 3300 | 6700 | 5000 | µg/kg | X | Y |

APPENDIX E-2

**Analytical Data 2015 Biovent Sampling**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | SL | Units | Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1296 | BVBS1296S001 | N | 4 Feb 2015 | 3 - 4 | SW8015B | HC | Diesel Range Organics (C8-C11) | 6700 U | 3300 | 6700 | 1000 | µg/kg | X | RL |
| SO | BVBS1296 | BVBS1296S001 | N | 4 Feb 2015 | 3 - 4 | SW8015B | HC | GRO (C4-C12) | 25000 J | 610 | 1200 | 1000 | µg/kg | X | Y |
| SO | BVBS1296 | BVBS1296S001 | N | 4 Feb 2015 | 3 - 4 | SW8015B | HC | ORO (C31-C40) | 13000 U | 6700 | 13000 | 10000 | µg/kg | X | N |
| SO | BVBS1296 | BVBS1296S001 | N | 4 Feb 2015 | 3 - 4 | SW8015B | HC | TOTAL EFH(C8-C40) | 220000 = | 3300 | 6700 | 10000 | µg/kg | X | Y |
| SO | BVBS1296 | BVBS1296S001 | N | 4 Feb 2015 | 3 - 4 | SW8270C-SIM | PAH | 1-Methylnaphthalene | 13 U | 6.7 | 13 | 2.5 | µg/kg | X | RL |
| SO | BVBS1296 | BVBS1296S001 | N | 4 Feb 2015 | 3 - 4 | SW8270C-SIM | PAH | 2-Methylnaphthalene | 13 U | 6.7 | 13 | 2.5 | µg/kg | X | RL |
| SO | BVBS1296 | BVBS1296S001 | N | 4 Feb 2015 | 3 - 4 | SW8270C-SIM | PAH | Acenaphthene | 13 U | 6.7 | 13 | 2.5 | µg/kg | X | RL |
| SO | BVBS1296 | BVBS1296S001 | N | 4 Feb 2015 | 3 - 4 | SW8270C-SIM | PAH | Acenaphthylene | 13 U | 6.7 | 13 | 2.5 | µg/kg | X | RL |
| SO | BVBS1296 | BVBS1296S001 | N | 4 Feb 2015 | 3 - 4 | SW8270C-SIM | PAH | Anthracene | 13 U | 6.7 | 13 | 2.5 | µg/kg | X | RL |
| SO | BVBS1296 | BVBS1296S001 | N | 4 Feb 2015 | 3 - 4 | SW8270C-SIM | PAH | Benzo(a)anthracene | 13 U | 6.7 | 13 |  | µg/kg |  | NC |
| SO | BVBS1296 | BVBS1296S001 | N | 4 Feb 2015 | 3 - 4 | SW8270C-SIM | PAH | Benzo(a)pyrene | 10 J | 6.7 | 13 |  | µg/kg |  | NC |
| SO | BVBS1296 | BVBS1296S001 | N | 4 Feb 2015 | 3 - 4 | SW8270C-SIM | PAH | Benzo(b)fluoranthene | 30 = | 6.7 | 13 |  | µg/kg |  | NC |
| SO | BVBS1296 | BVBS1296S001 | N | 4 Feb 2015 | 3 - 4 | SW8270C-SIM | PAH | Benzo(ghi)perylene | 33 = | 6.7 | 13 | 2.5 | µg/kg | X | Y |
| SO | BVBS1296 | BVBS1296S001 | N | 4 Feb 2015 | 3 - 4 | SW8270C-SIM | PAH | Benzo(k)fluoranthene | 8 J | 6.7 | 13 |  | µg/kg |  | NC |
| SO | BVBS1296 | BVBS1296S001 | N | 4 Feb 2015 | 3 - 4 | SW8270C-SIM | PAH | Chrysene | 13 U | 6.7 | 13 |  | µg/kg |  | NC |
| SO | BVBS1296 | BVBS1296S001 | N | 4 Feb 2015 | 3 - 4 | SW8270C-SIM | PAH | Dibenzo(a,h)anthracene | 13 U | 6.7 | 13 |  | µg/kg |  | NC |
| SO | BVBS1296 | BVBS1296S001 | N | 4 Feb 2015 | 3 - 4 | SW8270C-SIM | PAH | Fluoranthene | 30 = | 6.7 | 13 | 5.2 | µg/kg | X | Y |
| SO | BVBS1296 | BVBS1296S001 | N | 4 Feb 2015 | 3 - 4 | SW8270C-SIM | PAH | Fluorene | 13 U | 6.7 | 13 | 3.8 | µg/kg | X | RL |
| SO | BVBS1296 | BVBS1296S001 | N | 4 Feb 2015 | 3 - 4 | SW8270C-SIM | PAH | Indeno(1,2,3-cd)pyrene | 24 = | 6.7 | 13 |  | µg/kg |  | NC |
| SO | BVBS1296 | BVBS1296S001 | N | 4 Feb 2015 | 3 - 4 | SW8270C-SIM | PAH | Naphthalene | 13 U | 6.7 | 13 | 3.6 | µg/kg | X | RL |
| SO | BVBS1296 | BVBS1296S001 | N | 4 Feb 2015 | 3 - 4 | SW8270C-SIM | PAH | PAHTEQM | 16.2 = |  |  | 4.47 | µg/kg | X | Y |
| SO | BVBS1296 | BVBS1296S001 | N | 4 Feb 2015 | 3 - 4 | SW8270C-SIM | PAH | Phenanthrene | 13 U | 6.7 | 13 | 3.9 | µg/kg | X | RL |
| SO | BVBS1296 | BVBS1296S001 | N | 4 Feb 2015 | 3 - 4 | SW8270C-SIM | PAH | Pyrene | 73 = | 6.7 | 13 | 5.6 | µg/kg | X | Y |
| SO | BVBS1296 | BVBS1296S001 | N | 4 Feb 2015 | 3 - 4 | SW8270C-SIM | PHTH | Bis(2-ethylhexyl)phthalate | 740 = | 13 | 27 | 61 | µg/kg | X | Y |
| SO | BVBS1296 | BVBS1296S001 | N | 4 Feb 2015 | 3 - 4 | SW8270C-SIM | PHTH | Butyl benzyl phthalate | 27 U | 13 | 27 | 100 | µg/kg |  | N |
| SO | BVBS1296 | BVBS1296S001 | N | 4 Feb 2015 | 3 - 4 | SW8270C-SIM | PHTH | Diethyl phthalate | 27 U | 13 | 27 | 27 | µg/kg |  | N |
| SO | BVBS1296 | BVBS1296S001 | N | 4 Feb 2015 | 3 - 4 | SW8270C-SIM | PHTH | Dimethyl phthalate | 27 U | 13 | 27 | 27 | µg/kg |  | N |
| SO | BVBS1296 | BVBS1296S001 | N | 4 Feb 2015 | 3 - 4 | SW8270C-SIM | PHTH | Di-n-butyl phthalate | 27 U | 13 | 27 | 27 | µg/kg |  | N |
| SO | BVBS1296 | BVBS1296S001 | N | 4 Feb 2015 | 3 - 4 | SW8270C-SIM | PHTH | Di-n-octyl phthalate | 27 U | 13 | 27 | 27 | µg/kg |  | N |
| SO | BVBS1296 | BVBS1296S001 | N | 4 Feb 2015 | 3 - 4 | SW8260B | SVOC | Diisopropyl ether | 1.3 U | 1.3 | 13 | 10 | µg/kg |  | N |
| SO | BVBS1296 | BVBS1296S001 | N | 4 Feb 2015 | 3 - 4 | SW8270C-SIM | SVOC | n-Nitrosodimethylamine | 27 U | 13 | 27 | 10 | µg/kg | X | RL |
| SO | BVBS1296 | BVBS1296S001 | N | 4 Feb 2015 | 3 - 4 | SW8260B | SVOC | tert-Amyl methyl ether | 1.3 U | 1.3 | 6.6 | 5 | µg/kg |  | N |
| SO | BVBS1296 | BVBS1296S001 | N | 4 Feb 2015 | 3 - 4 | SW8260B | SVOC | tert-Butyl ethyl ether | 1.3 U | 1.3 | 6.6 | 5 | µg/kg |  | N |
| SO | BVBS1296 | BVBS1296S001 | N | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | 1,1,1,2-Tetrachloroethane | 1.3 U | 1.3 | 6.6 | 5 | µg/kg |  | N |
| SO | BVBS1296 | BVBS1296S001 | N | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | 1,1,1-Trichloroethane | 1.3 U | 1.3 | 6.6 | 5 | µg/kg |  | N |
| SO | BVBS1296 | BVBS1296S001 | N | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | 1,1,2,2-Tetrachloroethane | 1.3 U | 1.3 | 6.6 | 5 | µg/kg |  | N |

APPENDIX E-2

**Analytical Data 2015 Biovent Sampling**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | SL | Units | Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1296 | BVBS1296S001 | N | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | 1,1,2-Trichloro-1,2,2-trifluoroethane | 2.6 U | 2.6 | 6.6 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S001 | N | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | 1,1,2-Trichloroethane | 1.3 U | 1.3 | 6.6 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S001 | N | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | 1,1-Dichloroethane | 1.3 U | 1.3 | 6.6 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S001 | N | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | 1,1-Dichloroethene | 1.3 U | 1.3 | 6.6 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S001 | N | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | 1,1-Dichloropropene | 1.3 U | 1.3 | 6.6 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S001 | N | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | 1,2,3-Trichlorobenzene | 2.6 UJ | 2.6 | 6.6 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S001 | N | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | 1,2,3-Trichloropropane | 2.6 U | 2.6 | 6.6 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S001 | N | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | 1,2,4-Trichlorobenzene | 2.6 U | 2.6 | 6.6 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S001 | N | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | 1,2,4-Trimethylbenzene | 1.3 U | 1.3 | 6.6 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S001 | N | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | 1,2-Dibromo-3-chloropropane | 2.6 U | 2.6 | 13 | 10 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S001 | N | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | 1,2-Dibromoethane (EDB) | 1.3 U | 1.3 | 6.6 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S001 | N | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | 1,2-Dichlorobenzene | 1.3 U | 1.3 | 6.6 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S001 | N | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | 1,2-Dichloroethane | 1.3 U | 1.3 | 6.6 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S001 | N | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | 1,2-Dichloropropane | 1.3 U | 1.3 | 6.6 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S001 | N | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | 1,3,5-Trimethylbenzene | 1.3 U | 1.3 | 6.6 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S001 | N | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | 1,3-Dichlorobenzene | 1.3 U | 1.3 | 6.6 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S001 | N | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | 1,3-Dichloropropane | 1.3 U | 1.3 | 6.6 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S001 | N | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | 1,4-Dichlorobenzene | 1.3 U | 1.3 | 6.6 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S001 | N | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | 2,2-Dichloropropane | 2.6 U | 2.6 | 6.6 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S001 | N | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | 2-Butanone (MEK) | 6.6 U | 6.6 | 26 | 20 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S001 | N | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | 2-Chloro-1,1,1-trifluoroethane | 2.6 U | 2.6 | 13 | 10 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S001 | N | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | 2-Chloroethyl vinyl ether | 2.6 U | 2.6 | 13 | 10 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S001 | N | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | 2-Chlorotoluene | 1.3 U | 1.3 | 6.6 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S001 | N | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | 2-Hexanone | 6.6 U | 6.6 | 13 | 10 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S001 | N | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | 4-Chlorotoluene | 1.3 U | 1.3 | 13 | 10 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S001 | N | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | 4-Methyl-2-pentanone (MIBK) | 6.6 U | 6.6 | 13 | 10 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S001 | N | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | Acetone | 6.6 U | 6.6 | 26 | 20 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S001 | N | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | Benzene | 1.3 U | 1.3 | 6.6 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S001 | N | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | Bromobenzene | 1.3 U | 1.3 | 6.6 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S001 | N | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | Bromochloromethane | 1.3 U | 1.3 | 6.6 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S001 | N | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | Bromodichloromethane | 1.3 U | 1.3 | 6.6 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S001 | N | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | Bromoform | 2.6 U | 2.6 | 6.6 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S001 | N | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | Bromomethane | 2.6 U | 2.6 | 6.6 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S001 | N | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | Carbon tetrachloride | 1.3 U | 1.3 | 6.6 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S001 | N | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | Chlorobenzene | 1.3 U | 1.3 | 6.6 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S001 | N | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | Chloroethane | 2.6 U | 2.6 | 6.6 | 5 | µg/kg | | N |

APPENDIX E-2

**Analytical Data 2015 Biovent Sampling**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | SL | Units | Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1296 | BVBS1296S001 | N | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | Chloromethane | 2.6 U | 2.6 | 6.6 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S001 | N | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | Chlorotrifluoroethylene | 2.6 U | 2.6 | 13 | 10 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S001 | N | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | cis-1,2-Dichloroethene | 1.3 U | 1.3 | 6.6 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S001 | N | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | cis-1,3-Dichloropropene | 1.3 U | 1.3 | 6.6 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S001 | N | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | Dibromochloromethane | 1.3 U | 1.3 | 6.6 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S001 | N | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | Dibromomethane | 1.3 U | 1.3 | 6.6 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S001 | N | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | Dichlorodifluoromethane | 2.6 U | 2.6 | 6.6 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S001 | N | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | Ethylbenzene | 1.3 U | 1.3 | 6.6 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S001 | N | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | Hexachlorobutadiene | 2.6 UJ | 2.6 | 6.6 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S001 | N | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | Isopropylbenzene | 1.3 U | 1.3 | 6.6 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S001 | N | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | m,p-Xylenes | 2.6 U | 2.6 | 6.6 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S001 | N | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | Methylene chloride | 2.7 J | 2.6 | 13 | 10 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S001 | N | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | Methyl-tert-butyl Ether (MTBE) | 1.3 U | 1.3 | 6.6 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S001 | N | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | n-butylbenzene | 1.3 U | 1.3 | 6.6 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S001 | N | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | n-Propylbenzene | 1.3 U | 1.3 | 6.6 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S001 | N | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | o-Xylene | 1.3 U | 1.3 | 6.6 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S001 | N | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | p-Isopropyltoluene | 1.3 U | 1.3 | 6.6 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S001 | N | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | sec-Butylbenzene | 1.3 U | 1.3 | 6.6 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S001 | N | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | Styrene | 1.3 U | 1.3 | 6.6 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S001 | N | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | tert-Butanol (TBA) | 13 U | 13 | 66 | | µg/kg | | NC |
| SO | BVBS1296 | BVBS1296S001 | N | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | tert-Butylbenzene | 1.3 U | 1.3 | 6.6 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S001 | N | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | Tetrachloroethene | 1.3 U | 1.3 | 6.6 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S001 | N | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | Toluene | 1.3 U | 1.3 | 6.6 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S001 | N | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | trans-1,2-Dichloroethene | 1.3 U | 1.3 | 6.6 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S001 | N | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | trans-1,3-Dichloropropene | 1.3 U | 1.3 | 6.6 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S001 | N | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | Trichloroethene | 1.3 U | 1.3 | 6.6 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S001 | N | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | Trichlorofluoromethane | 2.6 U | 2.6 | 6.6 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S001 | N | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | Trichloromethane (Chloroform) | 1.3 U | 1.3 | 6.6 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S001 | N | 4 Feb 2015 | 3 - 4 | SW8260B | VOC | Vinyl chloride | 2.6 U | 2.6 | 6.6 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S002 | N | 4 Feb 2015 | 7 - 8 | Walkley-Black | GENCHEM | Total Organic Carbon | 626 U | 626 | 626 | | mg/kg | | NC |
| SO | BVBS1296 | BVBS1296S002 | N | 4 Feb 2015 | 7 - 8 | SW8015B | HC | Diesel Range Organics (C12-C14) | 5400 U | 2700 | 5400 | 5000 | µg/kg | X | N |
| SO | BVBS1296 | BVBS1296S002 | N | 4 Feb 2015 | 7 - 8 | SW8015B | HC | Diesel Range Organics (C15-C20) | 5400 U | 2700 | 5400 | 5000 | µg/kg | X | N |
| SO | BVBS1296 | BVBS1296S002 | N | 4 Feb 2015 | 7 - 8 | SW8015B | HC | Diesel Range Organics (C21-C30) | 5400 U | 2700 | 5400 | 5000 | µg/kg | X | N |
| SO | BVBS1296 | BVBS1296S002 | N | 4 Feb 2015 | 7 - 8 | SW8015B | HC | Diesel Range Organics (C8-C11) | 5400 U | 2700 | 5400 | 1000 | µg/kg | X | RL |
| SO | BVBS1296 | BVBS1296S002 | N | 4 Feb 2015 | 7 - 8 | SW8015B | HC | GRO (C4-C12) | 960 U | 480 | 960 | 1000 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S002 | N | 4 Feb 2015 | 7 - 8 | SW8015B | HC | ORO (C31-C40) | 11000 U | 5400 | 11000 | 10000 | µg/kg | X | N |

APPENDIX E-2

**Analytical Data 2015 Biovent Sampling**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | SL | Units | Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1296 | BVBS1296S002 | N | 4 Feb 2015 | 7 - 8 | SW8015B | HC | TOTAL EFH(C8-C40) | 5400 U | 2700 | 5400 | 10000 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S002 | N | 4 Feb 2015 | 7 - 8 | SW8270C-SIM | PAH | 1-Methylnaphthalene | 11 U | 5.4 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1296 | BVBS1296S002 | N | 4 Feb 2015 | 7 - 8 | SW8270C-SIM | PAH | 2-Methylnaphthalene | 11 U | 5.4 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1296 | BVBS1296S002 | N | 4 Feb 2015 | 7 - 8 | SW8270C-SIM | PAH | Acenaphthene | 11 U | 5.4 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1296 | BVBS1296S002 | N | 4 Feb 2015 | 7 - 8 | SW8270C-SIM | PAH | Acenaphthylene | 11 U | 5.4 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1296 | BVBS1296S002 | N | 4 Feb 2015 | 7 - 8 | SW8270C-SIM | PAH | Anthracene | 11 U | 5.4 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1296 | BVBS1296S002 | N | 4 Feb 2015 | 7 - 8 | SW8270C-SIM | PAH | Benzo(a)anthracene | 11 U | 5.4 | 11 | | µg/kg | | NC |
| SO | BVBS1296 | BVBS1296S002 | N | 4 Feb 2015 | 7 - 8 | SW8270C-SIM | PAH | Benzo(a)pyrene | 11 U | 5.4 | 11 | | µg/kg | | NC |
| SO | BVBS1296 | BVBS1296S002 | N | 4 Feb 2015 | 7 - 8 | SW8270C-SIM | PAH | Benzo(b)fluoranthene | 11 U | 5.4 | 11 | | µg/kg | | NC |
| SO | BVBS1296 | BVBS1296S002 | N | 4 Feb 2015 | 7 - 8 | SW8270C-SIM | PAH | Benzo(ghi)perylene | 11 U | 5.4 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1296 | BVBS1296S002 | N | 4 Feb 2015 | 7 - 8 | SW8270C-SIM | PAH | Benzo(k)fluoranthene | 11 U | 5.4 | 11 | | µg/kg | | NC |
| SO | BVBS1296 | BVBS1296S002 | N | 4 Feb 2015 | 7 - 8 | SW8270C-SIM | PAH | Chrysene | 11 U | 5.4 | 11 | | µg/kg | | NC |
| SO | BVBS1296 | BVBS1296S002 | N | 4 Feb 2015 | 7 - 8 | SW8270C-SIM | PAH | Dibenzo(a,h)anthracene | 11 U | 5.4 | 11 | | µg/kg | | NC |
| SO | BVBS1296 | BVBS1296S002 | N | 4 Feb 2015 | 7 - 8 | SW8270C-SIM | PAH | Fluoranthene | 11 U | 5.4 | 11 | 5.2 | µg/kg | X | RL |
| SO | BVBS1296 | BVBS1296S002 | N | 4 Feb 2015 | 7 - 8 | SW8270C-SIM | PAH | Fluorene | 11 U | 5.4 | 11 | 3.8 | µg/kg | X | RL |
| SO | BVBS1296 | BVBS1296S002 | N | 4 Feb 2015 | 7 - 8 | SW8270C-SIM | PAH | Indeno(1,2,3-cd)pyrene | 11 U | 5.4 | 11 | | µg/kg | | NC |
| SO | BVBS1296 | BVBS1296S002 | N | 4 Feb 2015 | 7 - 8 | SW8270C-SIM | PAH | Naphthalene | 11 U | 5.4 | 11 | 3.6 | µg/kg | X | RL |
| SO | BVBS1296 | BVBS1296S002 | N | 4 Feb 2015 | 7 - 8 | SW8270C-SIM | PAH | PAHTEQM | 0 U | | | 4.47 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S002 | N | 4 Feb 2015 | 7 - 8 | SW8270C-SIM | PAH | Phenanthrene | 11 U | 5.4 | 11 | 3.9 | µg/kg | X | RL |
| SO | BVBS1296 | BVBS1296S002 | N | 4 Feb 2015 | 7 - 8 | SW8270C-SIM | PAH | Pyrene | 11 U | 5.4 | 11 | 5.6 | µg/kg | X | N |
| SO | BVBS1296 | BVBS1296S002 | N | 4 Feb 2015 | 7 - 8 | SW8270C-SIM | PHTH | Bis(2-ethylhexyl)phthalate | 22 U | 11 | 22 | 61 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S002 | N | 4 Feb 2015 | 7 - 8 | SW8270C-SIM | PHTH | Butyl benzyl phthalate | 22 U | 11 | 22 | 100 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S002 | N | 4 Feb 2015 | 7 - 8 | SW8270C-SIM | PHTH | Diethyl phthalate | 22 U | 11 | 22 | 27 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S002 | N | 4 Feb 2015 | 7 - 8 | SW8270C-SIM | PHTH | Dimethyl phthalate | 22 U | 11 | 22 | 27 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S002 | N | 4 Feb 2015 | 7 - 8 | SW8270C-SIM | PHTH | Di-n-butyl phthalate | 22 U | 11 | 22 | 27 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S002 | N | 4 Feb 2015 | 7 - 8 | SW8270C-SIM | PHTH | Di-n-octyl phthalate | 22 U | 11 | 22 | 27 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S002 | N | 4 Feb 2015 | 7 - 8 | SW8260B | SVOC | Diisopropyl ether | 0.97 U | 0.97 | 9.7 | 10 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S002 | N | 4 Feb 2015 | 7 - 8 | SW8270C-SIM | SVOC | n-Nitrosodimethylamine | 22 U | 11 | 22 | 10 | µg/kg | X | RL |
| SO | BVBS1296 | BVBS1296S002 | N | 4 Feb 2015 | 7 - 8 | SW8260B | SVOC | tert-Amyl methyl ether | 0.97 U | 0.97 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S002 | N | 4 Feb 2015 | 7 - 8 | SW8260B | SVOC | tert-Butyl ethyl ether | 0.97 U | 0.97 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S002 | N | 4 Feb 2015 | 7 - 8 | SW8260B | VOC | 1,1,1,2-Tetrachloroethane | 0.97 U | 0.97 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S002 | N | 4 Feb 2015 | 7 - 8 | SW8260B | VOC | 1,1,1-Trichloroethane | 0.97 U | 0.97 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S002 | N | 4 Feb 2015 | 7 - 8 | SW8260B | VOC | 1,1,2,2-Tetrachloroethane | 0.97 U | 0.97 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S002 | N | 4 Feb 2015 | 7 - 8 | SW8260B | VOC | 1,1,2-Trichloro-1,2,2-trifluoroethane | 1.9 U | 1.9 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S002 | N | 4 Feb 2015 | 7 - 8 | SW8260B | VOC | 1,1,2-Trichloroethane | 0.97 U | 0.97 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S002 | N | 4 Feb 2015 | 7 - 8 | SW8260B | VOC | 1,1-Dichloroethane | 0.97 U | 0.97 | 4.8 | 5 | µg/kg | | N |

APPENDIX E-2

**Analytical Data 2015 Biovent Sampling**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | SL | Units | Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1296 | BVBS1296S002 | N | 4 Feb 2015 | 7 - 8 | SW8260B | VOC | 1,1-Dichloroethene | 0.97 U | 0.97 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S002 | N | 4 Feb 2015 | 7 - 8 | SW8260B | VOC | 1,1-Dichloropropene | 0.97 U | 0.97 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S002 | N | 4 Feb 2015 | 7 - 8 | SW8260B | VOC | 1,2,3-Trichlorobenzene | 1.9 U | 1.9 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S002 | N | 4 Feb 2015 | 7 - 8 | SW8260B | VOC | 1,2,3-Trichloropropane | 1.9 U | 1.9 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S002 | N | 4 Feb 2015 | 7 - 8 | SW8260B | VOC | 1,2,4-Trichlorobenzene | 1.9 U | 1.9 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S002 | N | 4 Feb 2015 | 7 - 8 | SW8260B | VOC | 1,2,4-Trimethylbenzene | 0.97 U | 0.97 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S002 | N | 4 Feb 2015 | 7 - 8 | SW8260B | VOC | 1,2-Dibromo-3-chloropropane | 1.9 U | 1.9 | 9.7 | 10 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S002 | N | 4 Feb 2015 | 7 - 8 | SW8260B | VOC | 1,2-Dibromoethane (EDB) | 0.97 U | 0.97 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S002 | N | 4 Feb 2015 | 7 - 8 | SW8260B | VOC | 1,2-Dichlorobenzene | 0.97 U | 0.97 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S002 | N | 4 Feb 2015 | 7 - 8 | SW8260B | VOC | 1,2-Dichloroethane | 0.97 U | 0.97 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S002 | N | 4 Feb 2015 | 7 - 8 | SW8260B | VOC | 1,2-Dichloropropane | 0.97 U | 0.97 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S002 | N | 4 Feb 2015 | 7 - 8 | SW8260B | VOC | 1,3,5-Trimethylbenzene | 0.97 U | 0.97 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S002 | N | 4 Feb 2015 | 7 - 8 | SW8260B | VOC | 1,3-Dichlorobenzene | 0.97 U | 0.97 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S002 | N | 4 Feb 2015 | 7 - 8 | SW8260B | VOC | 1,3-Dichloropropane | 0.97 U | 0.97 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S002 | N | 4 Feb 2015 | 7 - 8 | SW8260B | VOC | 1,4-Dichlorobenzene | 0.97 U | 0.97 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S002 | N | 4 Feb 2015 | 7 - 8 | SW8260B | VOC | 2,2-Dichloropropane | 1.9 U | 1.9 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S002 | N | 4 Feb 2015 | 7 - 8 | SW8260B | VOC | 2-Butanone (MEK) | 4.8 U | 4.8 | 19 | 20 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S002 | N | 4 Feb 2015 | 7 - 8 | SW8260B | VOC | 2-Chloro-1,1,1-trifluoroethane | 1.9 U | 1.9 | 9.7 | 10 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S002 | N | 4 Feb 2015 | 7 - 8 | SW8260B | VOC | 2-Chloroethyl vinyl ether | 1.9 U | 1.9 | 9.7 | 10 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S002 | N | 4 Feb 2015 | 7 - 8 | SW8260B | VOC | 2-Chlorotoluene | 0.97 U | 0.97 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S002 | N | 4 Feb 2015 | 7 - 8 | SW8260B | VOC | 2-Hexanone | 4.8 U | 4.8 | 9.7 | 10 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S002 | N | 4 Feb 2015 | 7 - 8 | SW8260B | VOC | 4-Chlorotoluene | 0.97 U | 0.97 | 9.7 | 10 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S002 | N | 4 Feb 2015 | 7 - 8 | SW8260B | VOC | 4-Methyl-2-pentanone (MIBK) | 4.8 U | 4.8 | 9.7 | 10 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S002 | N | 4 Feb 2015 | 7 - 8 | SW8260B | VOC | Acetone | 4.8 U | 4.8 | 19 | 20 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S002 | N | 4 Feb 2015 | 7 - 8 | SW8260B | VOC | Benzene | 0.97 U | 0.97 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S002 | N | 4 Feb 2015 | 7 - 8 | SW8260B | VOC | Bromobenzene | 0.97 U | 0.97 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S002 | N | 4 Feb 2015 | 7 - 8 | SW8260B | VOC | Bromochloromethane | 0.97 U | 0.97 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S002 | N | 4 Feb 2015 | 7 - 8 | SW8260B | VOC | Bromodichloromethane | 0.97 U | 0.97 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S002 | N | 4 Feb 2015 | 7 - 8 | SW8260B | VOC | Bromoform | 1.9 U | 1.9 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S002 | N | 4 Feb 2015 | 7 - 8 | SW8260B | VOC | Bromomethane | 1.9 U | 1.9 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S002 | N | 4 Feb 2015 | 7 - 8 | SW8260B | VOC | Carbon tetrachloride | 0.97 U | 0.97 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S002 | N | 4 Feb 2015 | 7 - 8 | SW8260B | VOC | Chlorobenzene | 0.97 U | 0.97 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S002 | N | 4 Feb 2015 | 7 - 8 | SW8260B | VOC | Chloroethane | 1.9 U | 1.9 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S002 | N | 4 Feb 2015 | 7 - 8 | SW8260B | VOC | Chloromethane | 1.9 U | 1.9 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S002 | N | 4 Feb 2015 | 7 - 8 | SW8260B | VOC | Chlorotrifluoroethylene | 1.9 U | 1.9 | 9.7 | 10 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S002 | N | 4 Feb 2015 | 7 - 8 | SW8260B | VOC | cis-1,2-Dichloroethene | 0.97 U | 0.97 | 4.8 | 5 | µg/kg | | N |

APPENDIX E-2

**Analytical Data 2015 Biovent Sampling**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | SL | Units | Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1296 | BVBS1296S002 | N | 4 Feb 2015 | 7 - 8 | SW8260B | VOC | cis-1,3-Dichloropropene | 0.97 U | 0.97 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S002 | N | 4 Feb 2015 | 7 - 8 | SW8260B | VOC | Dibromochloromethane | 0.97 U | 0.97 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S002 | N | 4 Feb 2015 | 7 - 8 | SW8260B | VOC | Dibromomethane | 0.97 U | 0.97 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S002 | N | 4 Feb 2015 | 7 - 8 | SW8260B | VOC | Dichlorodifluoromethane | 1.9 U | 1.9 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S002 | N | 4 Feb 2015 | 7 - 8 | SW8260B | VOC | Ethylbenzene | 0.97 U | 0.97 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S002 | N | 4 Feb 2015 | 7 - 8 | SW8260B | VOC | Hexachlorobutadiene | 1.9 U | 1.9 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S002 | N | 4 Feb 2015 | 7 - 8 | SW8260B | VOC | Isopropylbenzene | 0.97 U | 0.97 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S002 | N | 4 Feb 2015 | 7 - 8 | SW8260B | VOC | m,p-Xylenes | 1.9 U | 1.9 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S002 | N | 4 Feb 2015 | 7 - 8 | SW8260B | VOC | Methylene chloride | 1.9 U | 1.9 | 9.7 | 10 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S002 | N | 4 Feb 2015 | 7 - 8 | SW8260B | VOC | Methyl-tert-butyl Ether (MTBE) | 0.97 U | 0.97 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S002 | N | 4 Feb 2015 | 7 - 8 | SW8260B | VOC | n-butylbenzene | 0.97 U | 0.97 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S002 | N | 4 Feb 2015 | 7 - 8 | SW8260B | VOC | n-Propylbenzene | 0.97 U | 0.97 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S002 | N | 4 Feb 2015 | 7 - 8 | SW8260B | VOC | o-Xylene | 0.97 U | 0.97 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S002 | N | 4 Feb 2015 | 7 - 8 | SW8260B | VOC | p-Isopropyltoluene | 0.97 U | 0.97 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S002 | N | 4 Feb 2015 | 7 - 8 | SW8260B | VOC | sec-Butylbenzene | 0.97 U | 0.97 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S002 | N | 4 Feb 2015 | 7 - 8 | SW8260B | VOC | Styrene | 0.97 U | 0.97 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S002 | N | 4 Feb 2015 | 7 - 8 | SW8260B | VOC | tert-Butanol (TBA) | 9.7 U | 9.7 | 48 | | µg/kg | | NC |
| SO | BVBS1296 | BVBS1296S002 | N | 4 Feb 2015 | 7 - 8 | SW8260B | VOC | tert-Butylbenzene | 0.97 U | 0.97 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S002 | N | 4 Feb 2015 | 7 - 8 | SW8260B | VOC | Tetrachloroethene | 0.97 U | 0.97 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S002 | N | 4 Feb 2015 | 7 - 8 | SW8260B | VOC | Toluene | 0.97 U | 0.97 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S002 | N | 4 Feb 2015 | 7 - 8 | SW8260B | VOC | trans-1,2-Dichloroethene | 0.97 U | 0.97 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S002 | N | 4 Feb 2015 | 7 - 8 | SW8260B | VOC | trans-1,3-Dichloropropene | 0.97 U | 0.97 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S002 | N | 4 Feb 2015 | 7 - 8 | SW8260B | VOC | Trichloroethene | 0.97 U | 0.97 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S002 | N | 4 Feb 2015 | 7 - 8 | SW8260B | VOC | Trichlorofluoromethane | 1.9 U | 1.9 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S002 | N | 4 Feb 2015 | 7 - 8 | SW8260B | VOC | Trichloromethane (Chloroform) | 0.97 U | 0.97 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S002 | N | 4 Feb 2015 | 7 - 8 | SW8260B | VOC | Vinyl chloride | 1.9 U | 1.9 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S003 | N | 3 Mar 2015 | 3 - 4 | SW9045D | GENCHEM | pH | 5.44 = | | | | pH units | | NC |
| SO | BVBS1296 | BVBS1296S003 | N | 3 Mar 2015 | 3 - 4 | SW8015B | HC | Diesel Range Organics (C12-C14) | 99000 = | 2800 | 5600 | 5000 | µg/kg | X | Y |
| SO | BVBS1296 | BVBS1296S003 | N | 3 Mar 2015 | 3 - 4 | SW8015B | HC | Diesel Range Organics (C15-C20) | 170000 = | 2800 | 5600 | 5000 | µg/kg | X | Y |
| SO | BVBS1296 | BVBS1296S003 | N | 3 Mar 2015 | 3 - 4 | SW8015B | HC | Diesel Range Organics (C21-C30) | 11000 = | 2800 | 5600 | 5000 | µg/kg | X | Y |
| SO | BVBS1296 | BVBS1296S003 | N | 3 Mar 2015 | 3 - 4 | SW8015B | HC | Diesel Range Organics (C8-C11) | 5600 U | 2800 | 5600 | 1000 | µg/kg | X | RL |
| SO | BVBS1296 | BVBS1296S003 | N | 3 Mar 2015 | 3 - 4 | SW8015B | HC | GRO (C4-C12) | 3500 = | 510 | 1000 | 1000 | µg/kg | X | Y |
| SO | BVBS1296 | BVBS1296S003 | N | 3 Mar 2015 | 3 - 4 | SW8015B | HC | ORO (C31-C40) | 11000 U | 5600 | 11000 | 10000 | µg/kg | X | N |
| SO | BVBS1296 | BVBS1296S003 | N | 3 Mar 2015 | 3 - 4 | SW8015B | HC | TOTAL EFH(C8-C40) | 280000 = | 2800 | 5600 | 10000 | µg/kg | X | Y |
| SO | BVBS1296 | BVBS1296S003 | N | 3 Mar 2015 | 3 - 4 | SW8270C-SIM | PAH | 1-Methylnaphthalene | 11 U | 5.6 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1296 | BVBS1296S003 | N | 3 Mar 2015 | 3 - 4 | SW8270C-SIM | PAH | 2-Methylnaphthalene | 11 U | 5.6 | 11 | 2.5 | µg/kg | X | RL |

APPENDIX E-2

**Analytical Data 2015 Biovent Sampling**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | SL | Units | Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1296 | BVBS1296S003 | N | 3 Mar 2015 | 3 - 4 | SW8270C-SIM | PAH | Acenaphthene | 11 U | 5.6 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1296 | BVBS1296S003 | N | 3 Mar 2015 | 3 - 4 | SW8270C-SIM | PAH | Acenaphthylene | 11 U | 5.6 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1296 | BVBS1296S003 | N | 3 Mar 2015 | 3 - 4 | SW8270C-SIM | PAH | Anthracene | 11 U | 5.6 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1296 | BVBS1296S003 | N | 3 Mar 2015 | 3 - 4 | SW8270C-SIM | PAH | Benzo(a)anthracene | 11 U | 5.6 | 11 | | µg/kg | | NC |
| SO | BVBS1296 | BVBS1296S003 | N | 3 Mar 2015 | 3 - 4 | SW8270C-SIM | PAH | Benzo(a)pyrene | 11 U | 5.6 | 11 | | µg/kg | | NC |
| SO | BVBS1296 | BVBS1296S003 | N | 3 Mar 2015 | 3 - 4 | SW8270C-SIM | PAH | Benzo(b)fluoranthene | 11 U | 5.6 | 11 | | µg/kg | | NC |
| SO | BVBS1296 | BVBS1296S003 | N | 3 Mar 2015 | 3 - 4 | SW8270C-SIM | PAH | Benzo(ghi)perylene | 12 = | 5.6 | 11 | 2.5 | µg/kg | X | Y |
| SO | BVBS1296 | BVBS1296S003 | N | 3 Mar 2015 | 3 - 4 | SW8270C-SIM | PAH | Benzo(k)fluoranthene | 11 U | 5.6 | 11 | | µg/kg | | NC |
| SO | BVBS1296 | BVBS1296S003 | N | 3 Mar 2015 | 3 - 4 | SW8270C-SIM | PAH | Chrysene | 11 U | 5.6 | 11 | | µg/kg | | NC |
| SO | BVBS1296 | BVBS1296S003 | N | 3 Mar 2015 | 3 - 4 | SW8270C-SIM | PAH | Dibenzo(a,h)anthracene | 11 U | 5.6 | 11 | | µg/kg | | NC |
| SO | BVBS1296 | BVBS1296S003 | N | 3 Mar 2015 | 3 - 4 | SW8270C-SIM | PAH | Fluoranthene | 11 U | 5.6 | 11 | 5.2 | µg/kg | X | RL |
| SO | BVBS1296 | BVBS1296S003 | N | 3 Mar 2015 | 3 - 4 | SW8270C-SIM | PAH | Fluorene | 11 U | 5.6 | 11 | 3.8 | µg/kg | X | RL |
| SO | BVBS1296 | BVBS1296S003 | N | 3 Mar 2015 | 3 - 4 | SW8270C-SIM | PAH | Indeno(1,2,3-cd)pyrene | 11 U | 5.6 | 11 | | µg/kg | | NC |
| SO | BVBS1296 | BVBS1296S003 | N | 3 Mar 2015 | 3 - 4 | SW8270C-SIM | PAH | Naphthalene | 11 U | 5.6 | 11 | 3.6 | µg/kg | X | RL |
| SO | BVBS1296 | BVBS1296S003 | N | 3 Mar 2015 | 3 - 4 | SW8270C-SIM | PAH | PAHTEQM | 0 U | | | 4.47 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S003 | N | 3 Mar 2015 | 3 - 4 | SW8270C-SIM | PAH | Phenanthrene | 11 U | 5.6 | 11 | 3.9 | µg/kg | X | RL |
| SO | BVBS1296 | BVBS1296S003 | N | 3 Mar 2015 | 3 - 4 | SW8270C-SIM | PAH | Pyrene | 8.1 J | 5.6 | 11 | 5.6 | µg/kg | X | Y |
| SO | BVBS1296 | BVBS1296S003 | N | 3 Mar 2015 | 3 - 4 | SW8270C-SIM | PHTH | Bis(2-ethylhexyl)phthalate | 21 J | 11 | 23 | 61 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S003 | N | 3 Mar 2015 | 3 - 4 | SW8270C-SIM | PHTH | Butyl benzyl phthalate | 23 U | 11 | 23 | 100 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S003 | N | 3 Mar 2015 | 3 - 4 | SW8270C-SIM | PHTH | Diethyl phthalate | 23 U | 11 | 23 | 27 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S003 | N | 3 Mar 2015 | 3 - 4 | SW8270C-SIM | PHTH | Dimethyl phthalate | 23 U | 11 | 23 | 27 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S003 | N | 3 Mar 2015 | 3 - 4 | SW8270C-SIM | PHTH | Di-n-butyl phthalate | 23 U | 11 | 23 | 27 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S003 | N | 3 Mar 2015 | 3 - 4 | SW8270C-SIM | PHTH | Di-n-octyl phthalate | 23 U | 11 | 23 | 27 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S003 | N | 3 Mar 2015 | 3 - 4 | SW8260B | SVOC | Diisopropyl ether | 1 U | 1 | 10 | 10 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S003 | N | 3 Mar 2015 | 3 - 4 | SW8270C-SIM | SVOC | n-Nitrosodimethylamine | 23 U | 11 | 23 | 10 | µg/kg | X | RL |
| SO | BVBS1296 | BVBS1296S003 | N | 3 Mar 2015 | 3 - 4 | SW8260B | SVOC | tert-Amyl methyl ether | 1 U | 1 | 5 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S003 | N | 3 Mar 2015 | 3 - 4 | SW8260B | SVOC | tert-Butyl ethyl ether | 1 U | 1 | 5 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S003 | N | 3 Mar 2015 | 3 - 4 | SW8260B | VOC | 1,1,1,2-Tetrachloroethane | 1 U | 1 | 5 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S003 | N | 3 Mar 2015 | 3 - 4 | SW8260B | VOC | 1,1,1-Trichloroethane | 1 U | 1 | 5 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S003 | N | 3 Mar 2015 | 3 - 4 | SW8260B | VOC | 1,1,2,2-Tetrachloroethane | 1 U | 1 | 5 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S003 | N | 3 Mar 2015 | 3 - 4 | SW8260B | VOC | 1,1,2-Trichloro-1,2,2-trifluoroethane | 2 U | 2 | 5 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S003 | N | 3 Mar 2015 | 3 - 4 | SW8260B | VOC | 1,1,2-Trichloroethane | 1 U | 1 | 5 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S003 | N | 3 Mar 2015 | 3 - 4 | SW8260B | VOC | 1,1-Dichloroethane | 1 U | 1 | 5 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S003 | N | 3 Mar 2015 | 3 - 4 | SW8260B | VOC | 1,1-Dichloroethene | 1 U | 1 | 5 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S003 | N | 3 Mar 2015 | 3 - 4 | SW8260B | VOC | 1,1-Dichloropropene | 1 U | 1 | 5 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S003 | N | 3 Mar 2015 | 3 - 4 | SW8260B | VOC | 1,2,3-Trichlorobenzene | 2 U | 2 | 5 | 5 | µg/kg | | N |

APPENDIX E-2

**Analytical Data 2015 Biovent Sampling**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | SL | Units | Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1296 | BVBS1296S003 | N | 3 Mar 2015 | 3 - 4 | SW8260B | VOC | 1,2,3-Trichloropropane | 2 U | 2 | 5 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S003 | N | 3 Mar 2015 | 3 - 4 | SW8260B | VOC | 1,2,4-Trichlorobenzene | 2 U | 2 | 5 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S003 | N | 3 Mar 2015 | 3 - 4 | SW8260B | VOC | 1,2,4-Trimethylbenzene | 1 U | 1 | 5 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S003 | N | 3 Mar 2015 | 3 - 4 | SW8260B | VOC | 1,2-Dibromo-3-chloropropane | 2 U | 2 | 10 | 10 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S003 | N | 3 Mar 2015 | 3 - 4 | SW8260B | VOC | 1,2-Dibromoethane (EDB) | 1 U | 1 | 5 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S003 | N | 3 Mar 2015 | 3 - 4 | SW8260B | VOC | 1,2-Dichlorobenzene | 1 U | 1 | 5 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S003 | N | 3 Mar 2015 | 3 - 4 | SW8260B | VOC | 1,2-Dichloroethane | 1 U | 1 | 5 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S003 | N | 3 Mar 2015 | 3 - 4 | SW8260B | VOC | 1,2-Dichloropropane | 1 U | 1 | 5 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S003 | N | 3 Mar 2015 | 3 - 4 | SW8260B | VOC | 1,3,5-Trimethylbenzene | 1 U | 1 | 5 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S003 | N | 3 Mar 2015 | 3 - 4 | SW8260B | VOC | 1,3-Dichlorobenzene | 1 U | 1 | 5 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S003 | N | 3 Mar 2015 | 3 - 4 | SW8260B | VOC | 1,3-Dichloropropane | 1 U | 1 | 5 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S003 | N | 3 Mar 2015 | 3 - 4 | SW8260B | VOC | 1,4-Dichlorobenzene | 1 U | 1 | 5 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S003 | N | 3 Mar 2015 | 3 - 4 | SW8260B | VOC | 2,2-Dichloropropane | 2 U | 2 | 5 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S003 | N | 3 Mar 2015 | 3 - 4 | SW8260B | VOC | 2-Butanone (MEK) | 5 U | 5 | 20 | 20 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S003 | N | 3 Mar 2015 | 3 - 4 | SW8260B | VOC | 2-Chloro-1,1,1-trifluoroethane | 2 U | 2 | 10 | 10 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S003 | N | 3 Mar 2015 | 3 - 4 | SW8260B | VOC | 2-Chloroethyl vinyl ether | 2 U | 2 | 10 | 10 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S003 | N | 3 Mar 2015 | 3 - 4 | SW8260B | VOC | 2-Chlorotoluene | 1 U | 1 | 5 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S003 | N | 3 Mar 2015 | 3 - 4 | SW8260B | VOC | 2-Hexanone | 5 U | 5 | 10 | 10 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S003 | N | 3 Mar 2015 | 3 - 4 | SW8260B | VOC | 4-Chlorotoluene | 1 U | 1 | 10 | 10 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S003 | N | 3 Mar 2015 | 3 - 4 | SW8260B | VOC | 4-Methyl-2-pentanone (MIBK) | 5 U | 5 | 10 | 10 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S003 | N | 3 Mar 2015 | 3 - 4 | SW8260B | VOC | Acetone | 5 U | 5 | 20 | 20 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S003 | N | 3 Mar 2015 | 3 - 4 | SW8260B | VOC | Benzene | 1 U | 1 | 5 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S003 | N | 3 Mar 2015 | 3 - 4 | SW8260B | VOC | Bromobenzene | 1 U | 1 | 5 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S003 | N | 3 Mar 2015 | 3 - 4 | SW8260B | VOC | Bromochloromethane | 1 U | 1 | 5 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S003 | N | 3 Mar 2015 | 3 - 4 | SW8260B | VOC | Bromodichloromethane | 1 U | 1 | 5 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S003 | N | 3 Mar 2015 | 3 - 4 | SW8260B | VOC | Bromoform | 2 U | 2 | 5 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S003 | N | 3 Mar 2015 | 3 - 4 | SW8260B | VOC | Bromomethane | 2 U | 2 | 5 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S003 | N | 3 Mar 2015 | 3 - 4 | SW8260B | VOC | Carbon tetrachloride | 1 U | 1 | 5 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S003 | N | 3 Mar 2015 | 3 - 4 | SW8260B | VOC | Chlorobenzene | 1 U | 1 | 5 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S003 | N | 3 Mar 2015 | 3 - 4 | SW8260B | VOC | Chloroethane | 2 U | 2 | 5 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S003 | N | 3 Mar 2015 | 3 - 4 | SW8260B | VOC | Chloromethane | 2 U | 2 | 5 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S003 | N | 3 Mar 2015 | 3 - 4 | SW8260B | VOC | Chlorotrifluoroethylene | 2 U | 2 | 10 | 10 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S003 | N | 3 Mar 2015 | 3 - 4 | SW8260B | VOC | cis-1,2-Dichloroethene | 1 U | 1 | 5 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S003 | N | 3 Mar 2015 | 3 - 4 | SW8260B | VOC | cis-1,3-Dichloropropene | 1 U | 1 | 5 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S003 | N | 3 Mar 2015 | 3 - 4 | SW8260B | VOC | Dibromochloromethane | 1 U | 1 | 5 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S003 | N | 3 Mar 2015 | 3 - 4 | SW8260B | VOC | Dibromomethane | 1 U | 1 | 5 | 5 | µg/kg | | N |

APPENDIX E-2

**Analytical Data 2015 Biovent Sampling**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | SL | Units | Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1296 | BVBS1296S003 | N | 3 Mar 2015 | 3 - 4 | SW8260B | VOC | Dichlorodifluoromethane | 2 U | 2 | 5 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S003 | N | 3 Mar 2015 | 3 - 4 | SW8260B | VOC | Ethylbenzene | 1 U | 1 | 5 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S003 | N | 3 Mar 2015 | 3 - 4 | SW8260B | VOC | Hexachlorobutadiene | 2 U | 2 | 5 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S003 | N | 3 Mar 2015 | 3 - 4 | SW8260B | VOC | Isopropylbenzene | 1 U | 1 | 5 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S003 | N | 3 Mar 2015 | 3 - 4 | SW8260B | VOC | m,p-Xylenes | 2 U | 2 | 5 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S003 | N | 3 Mar 2015 | 3 - 4 | SW8260B | VOC | Methylene chloride | 2 U | 2 | 10 | 10 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S003 | N | 3 Mar 2015 | 3 - 4 | SW8260B | VOC | Methyl-tert-butyl Ether (MTBE) | 1 U | 1 | 5 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S003 | N | 3 Mar 2015 | 3 - 4 | SW8260B | VOC | n-butylbenzene | 1 U | 1 | 5 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S003 | N | 3 Mar 2015 | 3 - 4 | SW8260B | VOC | n-Propylbenzene | 1 U | 1 | 5 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S003 | N | 3 Mar 2015 | 3 - 4 | SW8260B | VOC | o-Xylene | 1 U | 1 | 5 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S003 | N | 3 Mar 2015 | 3 - 4 | SW8260B | VOC | p-Isopropyltoluene | 1 U | 1 | 5 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S003 | N | 3 Mar 2015 | 3 - 4 | SW8260B | VOC | sec-Butylbenzene | 1 U | 1 | 5 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S003 | N | 3 Mar 2015 | 3 - 4 | SW8260B | VOC | Styrene | 1 U | 1 | 5 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S003 | N | 3 Mar 2015 | 3 - 4 | SW8260B | VOC | tert-Butanol (TBA) | 10 U | 10 | 50 | | µg/kg | | NC |
| SO | BVBS1296 | BVBS1296S003 | N | 3 Mar 2015 | 3 - 4 | SW8260B | VOC | tert-Butylbenzene | 1 U | 1 | 5 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S003 | N | 3 Mar 2015 | 3 - 4 | SW8260B | VOC | Tetrachloroethene | 1 U | 1 | 5 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S003 | N | 3 Mar 2015 | 3 - 4 | SW8260B | VOC | Toluene | 1 U | 1 | 5 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S003 | N | 3 Mar 2015 | 3 - 4 | SW8260B | VOC | trans-1,2-Dichloroethene | 1 U | 1 | 5 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S003 | N | 3 Mar 2015 | 3 - 4 | SW8260B | VOC | trans-1,3-Dichloropropene | 1 U | 1 | 5 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S003 | N | 3 Mar 2015 | 3 - 4 | SW8260B | VOC | Trichloroethene | 1 U | 1 | 5 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S003 | N | 3 Mar 2015 | 3 - 4 | SW8260B | VOC | Trichlorofluoromethane | 2 U | 2 | 5 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S003 | N | 3 Mar 2015 | 3 - 4 | SW8260B | VOC | Trichloromethane (Chloroform) | 1 U | 1 | 5 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S003 | N | 3 Mar 2015 | 3 - 4 | SW8260B | VOC | Vinyl chloride | 2 U | 2 | 5 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S004 | N | 3 Mar 2015 | 7 - 8 | SW9045D | GENCHEM | pH | 6.79 = | | | | pH units | | NC |
| SO | BVBS1296 | BVBS1296S004 | N | 3 Mar 2015 | 7 - 8 | SW8015B | HC | Diesel Range Organics (C12-C14) | 6100 = | 2700 | 5400 | 5000 | µg/kg | X | Y |
| SO | BVBS1296 | BVBS1296S004 | N | 3 Mar 2015 | 7 - 8 | SW8015B | HC | Diesel Range Organics (C15-C20) | 17000 = | 2700 | 5400 | 5000 | µg/kg | X | Y |
| SO | BVBS1296 | BVBS1296S004 | N | 3 Mar 2015 | 7 - 8 | SW8015B | HC | Diesel Range Organics (C21-C30) | 5400 U | 2700 | 5400 | 5000 | µg/kg | X | N |
| SO | BVBS1296 | BVBS1296S004 | N | 3 Mar 2015 | 7 - 8 | SW8015B | HC | Diesel Range Organics (C8-C11) | 5400 U | 2700 | 5400 | 1000 | µg/kg | X | RL |
| SO | BVBS1296 | BVBS1296S004 | N | 3 Mar 2015 | 7 - 8 | SW8015B | HC | GRO (C4-C12) | 5300 = | 470 | 940 | 1000 | µg/kg | X | Y |
| SO | BVBS1296 | BVBS1296S004 | N | 3 Mar 2015 | 7 - 8 | SW8015B | HC | ORO (C31-C40) | 11000 U | 5400 | 11000 | 10000 | µg/kg | X | N |
| SO | BVBS1296 | BVBS1296S004 | N | 3 Mar 2015 | 7 - 8 | SW8015B | HC | TOTAL EFH(C8-C40) | 25000 = | 2700 | 5400 | 10000 | µg/kg | X | Y |
| SO | BVBS1296 | BVBS1296S004 | N | 3 Mar 2015 | 7 - 8 | SW8270C-SIM | PAH | 1-Methylnaphthalene | 11 U | 5.4 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1296 | BVBS1296S004 | N | 3 Mar 2015 | 7 - 8 | SW8270C-SIM | PAH | 2-Methylnaphthalene | 11 U | 5.4 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1296 | BVBS1296S004 | N | 3 Mar 2015 | 7 - 8 | SW8270C-SIM | PAH | Acenaphthene | 11 U | 5.4 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1296 | BVBS1296S004 | N | 3 Mar 2015 | 7 - 8 | SW8270C-SIM | PAH | Acenaphthylene | 11 U | 5.4 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1296 | BVBS1296S004 | N | 3 Mar 2015 | 7 - 8 | SW8270C-SIM | PAH | Anthracene | 11 U | 5.4 | 11 | 2.5 | µg/kg | X | RL |

APPENDIX E-2

**Analytical Data 2015 Biovent Sampling**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | SL | Units | Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1296 | BVBS1296S004 | N | 3 Mar 2015 | 7 - 8 | SW8270C-SIM | PAH | Benzo(a)anthracene | 11 U | 5.4 | 11 | | µg/kg | | NC |
| SO | BVBS1296 | BVBS1296S004 | N | 3 Mar 2015 | 7 - 8 | SW8270C-SIM | PAH | Benzo(a)pyrene | 11 U | 5.4 | 11 | | µg/kg | | NC |
| SO | BVBS1296 | BVBS1296S004 | N | 3 Mar 2015 | 7 - 8 | SW8270C-SIM | PAH | Benzo(b)fluoranthene | 11 U | 5.4 | 11 | | µg/kg | | NC |
| SO | BVBS1296 | BVBS1296S004 | N | 3 Mar 2015 | 7 - 8 | SW8270C-SIM | PAH | Benzo(ghi)perylene | 11 U | 5.4 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1296 | BVBS1296S004 | N | 3 Mar 2015 | 7 - 8 | SW8270C-SIM | PAH | Benzo(k)fluoranthene | 11 U | 5.4 | 11 | | µg/kg | | NC |
| SO | BVBS1296 | BVBS1296S004 | N | 3 Mar 2015 | 7 - 8 | SW8270C-SIM | PAH | Chrysene | 11 U | 5.4 | 11 | | µg/kg | | NC |
| SO | BVBS1296 | BVBS1296S004 | N | 3 Mar 2015 | 7 - 8 | SW8270C-SIM | PAH | Dibenzo(a,h)anthracene | 11 U | 5.4 | 11 | | µg/kg | | NC |
| SO | BVBS1296 | BVBS1296S004 | N | 3 Mar 2015 | 7 - 8 | SW8270C-SIM | PAH | Fluoranthene | 11 U | 5.4 | 11 | 5.2 | µg/kg | X | RL |
| SO | BVBS1296 | BVBS1296S004 | N | 3 Mar 2015 | 7 - 8 | SW8270C-SIM | PAH | Fluorene | 11 U | 5.4 | 11 | 3.8 | µg/kg | X | RL |
| SO | BVBS1296 | BVBS1296S004 | N | 3 Mar 2015 | 7 - 8 | SW8270C-SIM | PAH | Indeno(1,2,3-cd)pyrene | 11 U | 5.4 | 11 | | µg/kg | | NC |
| SO | BVBS1296 | BVBS1296S004 | N | 3 Mar 2015 | 7 - 8 | SW8270C-SIM | PAH | Naphthalene | 11 U | 5.4 | 11 | 3.6 | µg/kg | X | RL |
| SO | BVBS1296 | BVBS1296S004 | N | 3 Mar 2015 | 7 - 8 | SW8270C-SIM | PAH | PAHTEQM | 0 U | | | 4.47 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S004 | N | 3 Mar 2015 | 7 - 8 | SW8270C-SIM | PAH | Phenanthrene | 11 U | 5.4 | 11 | 3.9 | µg/kg | X | RL |
| SO | BVBS1296 | BVBS1296S004 | N | 3 Mar 2015 | 7 - 8 | SW8270C-SIM | PAH | Pyrene | 11 U | 5.4 | 11 | 5.6 | µg/kg | X | N |
| SO | BVBS1296 | BVBS1296S004 | N | 3 Mar 2015 | 7 - 8 | SW8270C-SIM | PHTH | Bis(2-ethylhexyl)phthalate | 280 = | 11 | 21 | 61 | µg/kg | X | Y |
| SO | BVBS1296 | BVBS1296S004 | N | 3 Mar 2015 | 7 - 8 | SW8270C-SIM | PHTH | Butyl benzyl phthalate | 21 U | 11 | 21 | 100 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S004 | N | 3 Mar 2015 | 7 - 8 | SW8270C-SIM | PHTH | Diethyl phthalate | 21 U | 11 | 21 | 27 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S004 | N | 3 Mar 2015 | 7 - 8 | SW8270C-SIM | PHTH | Dimethyl phthalate | 21 U | 11 | 21 | 27 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S004 | N | 3 Mar 2015 | 7 - 8 | SW8270C-SIM | PHTH | Di-n-butyl phthalate | 21 U | 11 | 21 | 27 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S004 | N | 3 Mar 2015 | 7 - 8 | SW8270C-SIM | PHTH | Di-n-octyl phthalate | 12 J | 11 | 21 | 27 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S004 | N | 3 Mar 2015 | 7 - 8 | SW8260B | SVOC | Diisopropyl ether | 0.91 U | 0.91 | 9.1 | 10 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S004 | N | 3 Mar 2015 | 7 - 8 | SW8270C-SIM | SVOC | n-Nitrosodimethylamine | 21 U | 11 | 21 | 10 | µg/kg | X | RL |
| SO | BVBS1296 | BVBS1296S004 | N | 3 Mar 2015 | 7 - 8 | SW8260B | SVOC | tert-Amyl methyl ether | 0.91 U | 0.91 | 4.6 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S004 | N | 3 Mar 2015 | 7 - 8 | SW8260B | SVOC | tert-Butyl ethyl ether | 0.91 U | 0.91 | 4.6 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S004 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | 1,1,1,2-Tetrachloroethane | 0.91 U | 0.91 | 4.6 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S004 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | 1,1,1-Trichloroethane | 0.91 U | 0.91 | 4.6 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S004 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | 1,1,2,2-Tetrachloroethane | 0.91 U | 0.91 | 4.6 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S004 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | 1,1,2-Trichloro-1,2,2-trifluoroethane | 1.8 U | 1.8 | 4.6 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S004 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | 1,1,2-Trichloroethane | 0.91 U | 0.91 | 4.6 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S004 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | 1,1-Dichloroethane | 0.91 U | 0.91 | 4.6 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S004 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | 1,1-Dichloroethene | 0.91 U | 0.91 | 4.6 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S004 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | 1,1-Dichloropropene | 0.91 U | 0.91 | 4.6 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S004 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | 1,2,3-Trichlorobenzene | 1.8 U | 1.8 | 4.6 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S004 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | 1,2,3-Trichloropropane | 1.8 U | 1.8 | 4.6 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S004 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | 1,2,4-Trichlorobenzene | 1.8 U | 1.8 | 4.6 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S004 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | 1,2,4-Trimethylbenzene | 0.91 U | 0.91 | 4.6 | 5 | µg/kg | | N |

APPENDIX E-2

**Analytical Data 2015 Biovent Sampling**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | SL | Units | Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1296 | BVBS1296S004 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | 1,2-Dibromo-3-chloropropane | 1.8 U | 1.8 | 9.1 | 10 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S004 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | 1,2-Dibromoethane (EDB) | 0.91 U | 0.91 | 4.6 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S004 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | 1,2-Dichlorobenzene | 0.91 U | 0.91 | 4.6 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S004 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | 1,2-Dichloroethane | 0.91 U | 0.91 | 4.6 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S004 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | 1,2-Dichloropropane | 0.91 U | 0.91 | 4.6 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S004 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | 1,3,5-Trimethylbenzene | 0.91 U | 0.91 | 4.6 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S004 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | 1,3-Dichlorobenzene | 0.91 U | 0.91 | 4.6 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S004 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | 1,3-Dichloropropane | 0.91 U | 0.91 | 4.6 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S004 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | 1,4-Dichlorobenzene | 0.91 U | 0.91 | 4.6 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S004 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | 2,2-Dichloropropane | 1.8 U | 1.8 | 4.6 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S004 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | 2-Butanone (MEK) | 4.6 U | 4.6 | 18 | 20 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S004 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | 2-Chloro-1,1,1-trifluoroethane | 1.8 U | 1.8 | 9.1 | 10 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S004 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | 2-Chloroethyl vinyl ether | 1.8 U | 1.8 | 9.1 | 10 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S004 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | 2-Chlorotoluene | 0.91 U | 0.91 | 4.6 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S004 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | 2-Hexanone | 4.6 U | 4.6 | 9.1 | 10 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S004 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | 4-Chlorotoluene | 0.91 U | 0.91 | 9.1 | 10 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S004 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | 4-Methyl-2-pentanone (MIBK) | 4.6 U | 4.6 | 9.1 | 10 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S004 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | Acetone | 8.3 J | 4.6 | 18 | 20 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S004 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | Benzene | 0.91 U | 0.91 | 4.6 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S004 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | Bromobenzene | 0.91 U | 0.91 | 4.6 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S004 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | Bromochloromethane | 0.91 U | 0.91 | 4.6 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S004 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | Bromodichloromethane | 0.91 U | 0.91 | 4.6 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S004 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | Bromoform | 1.8 U | 1.8 | 4.6 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S004 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | Bromomethane | 1.8 U | 1.8 | 4.6 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S004 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | Carbon tetrachloride | 0.91 U | 0.91 | 4.6 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S004 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | Chlorobenzene | 0.91 U | 0.91 | 4.6 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S004 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | Chloroethane | 1.8 U | 1.8 | 4.6 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S004 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | Chloromethane | 1.8 U | 1.8 | 4.6 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S004 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | Chlorotrifluoroethylene | 1.8 U | 1.8 | 9.1 | 10 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S004 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | cis-1,2-Dichloroethene | 0.91 U | 0.91 | 4.6 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S004 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | cis-1,3-Dichloropropene | 0.91 U | 0.91 | 4.6 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S004 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | Dibromochloromethane | 0.91 U | 0.91 | 4.6 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S004 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | Dibromomethane | 0.91 U | 0.91 | 4.6 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S004 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | Dichlorodifluoromethane | 1.8 U | 1.8 | 4.6 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S004 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | Ethylbenzene | 0.91 U | 0.91 | 4.6 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S004 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | Hexachlorobutadiene | 1.8 U | 1.8 | 4.6 | 5 | µg/kg | | N |

APPENDIX E-2

**Analytical Data 2015 Biovent Sampling**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | SL | Units | Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1296 | BVBS1296S004 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | Isopropylbenzene | 0.91 U | 0.91 | 4.6 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S004 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | m,p-Xylenes | 1.8 U | 1.8 | 4.6 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S004 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | Methylene chloride | 1.8 U | 1.8 | 9.1 | 10 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S004 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | Methyl-tert-butyl Ether (MTBE) | 0.91 U | 0.91 | 4.6 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S004 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | n-butylbenzene | 0.91 U | 0.91 | 4.6 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S004 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | n-Propylbenzene | 0.91 U | 0.91 | 4.6 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S004 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | o-Xylene | 0.91 U | 0.91 | 4.6 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S004 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | p-Isopropyltoluene | 0.91 U | 0.91 | 4.6 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S004 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | sec-Butylbenzene | 0.91 U | 0.91 | 4.6 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S004 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | Styrene | 0.91 U | 0.91 | 4.6 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S004 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | tert-Butanol (TBA) | 9.1 U | 9.1 | 46 | | µg/kg | | NC |
| SO | BVBS1296 | BVBS1296S004 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | tert-Butylbenzene | 0.91 U | 0.91 | 4.6 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S004 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | Tetrachloroethene | 0.91 U | 0.91 | 4.6 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S004 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | Toluene | 0.91 U | 0.91 | 4.6 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S004 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | trans-1,2-Dichloroethene | 0.91 U | 0.91 | 4.6 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S004 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | trans-1,3-Dichloropropene | 0.91 U | 0.91 | 4.6 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S004 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | Trichloroethene | 0.91 U | 0.91 | 4.6 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S004 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | Trichlorofluoromethane | 1.8 U | 1.8 | 4.6 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S004 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | Trichloromethane (Chloroform) | 0.91 U | 0.91 | 4.6 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S004 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | Vinyl chloride | 1.8 U | 1.8 | 4.6 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S005 | N | 10 Apr 2015 | 3 - 4 | SW9045D | GENCHEM | pH | 4.69 = | | | | pH units | | NC |
| SO | BVBS1296 | BVBS1296S005 | N | 10 Apr 2015 | 3 - 4 | M8015D | HC | Diesel Range Organics (C12-C14) | 220000 J | 2900 | 5700 | 5000 | µg/kg | X | Y |
| SO | BVBS1296 | BVBS1296S005 | N | 10 Apr 2015 | 3 - 4 | M8015D | HC | Diesel Range Organics (C15-C20) | 390000 J | 2900 | 5700 | 5000 | µg/kg | X | Y |
| SO | BVBS1296 | BVBS1296S005 | N | 10 Apr 2015 | 3 - 4 | M8015D | HC | Diesel Range Organics (C21-C30) | 35000 J | 2900 | 5700 | 5000 | µg/kg | X | Y |
| SO | BVBS1296 | BVBS1296S005 | N | 10 Apr 2015 | 3 - 4 | M8015D | HC | Diesel Range Organics (C8-C11) | 10000 U | 2900 | 5700 | 1000 | µg/kg | X | RL |
| SO | BVBS1296 | BVBS1296S005 | N | 10 Apr 2015 | 3 - 4 | SW8015B | HC | GRO (C4-C12) | 70000 = | 1000 | 2100 | 1000 | µg/kg | X | Y |
| SO | BVBS1296 | BVBS1296S005 | N | 10 Apr 2015 | 3 - 4 | M8015D | HC | ORO (C31-C40) | 11000 U | 5700 | 11000 | 10000 | µg/kg | X | N |
| SO | BVBS1296 | BVBS1296S005 | N | 10 Apr 2015 | 3 - 4 | M8015D | HC | TOTAL EFH(C8-C40) | 660000 J | 2900 | 5700 | 10000 | µg/kg | X | Y |
| SO | BVBS1296 | BVBS1296S005 | N | 10 Apr 2015 | 3 - 4 | SW8270C-SIM | PAH | 1-Methylnaphthalene | 11 U | 5.7 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1296 | BVBS1296S005 | N | 10 Apr 2015 | 3 - 4 | SW8270C-SIM | PAH | 2-Methylnaphthalene | 11 U | 5.7 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1296 | BVBS1296S005 | N | 10 Apr 2015 | 3 - 4 | SW8270C-SIM | PAH | Acenaphthene | 11 U | 5.7 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1296 | BVBS1296S005 | N | 10 Apr 2015 | 3 - 4 | SW8270C-SIM | PAH | Acenaphthylene | 11 U | 5.7 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1296 | BVBS1296S005 | N | 10 Apr 2015 | 3 - 4 | SW8270C-SIM | PAH | Anthracene | 8.6 J | 5.7 | 11 | 2.5 | µg/kg | X | Y |
| SO | BVBS1296 | BVBS1296S005 | N | 10 Apr 2015 | 3 - 4 | SW8270C-SIM | PAH | Benzo(a)anthracene | 14 = | 5.7 | 11 | | µg/kg | | NC |
| SO | BVBS1296 | BVBS1296S005 | N | 10 Apr 2015 | 3 - 4 | SW8270C-SIM | PAH | Benzo(a)pyrene | 9.8 J | 5.7 | 11 | | µg/kg | | NC |
| SO | BVBS1296 | BVBS1296S005 | N | 10 Apr 2015 | 3 - 4 | SW8270C-SIM | PAH | Benzo(b)fluoranthene | 25 = | 5.7 | 11 | | µg/kg | | NC |

APPENDIX E-2

**Analytical Data 2015 Biovent Sampling**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | SL | Units | Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1296 | BVBS1296S005 | N | 10 Apr 2015 | 3 - 4 | SW8270C-SIM | PAH | Benzo(ghi)perylene | 32 = | 5.7 | 11 | 2.5 | µg/kg | X | Y |
| SO | BVBS1296 | BVBS1296S005 | N | 10 Apr 2015 | 3 - 4 | SW8270C-SIM | PAH | Benzo(k)fluoranthene | 7.7 J | 5.7 | 11 | | µg/kg | | NC |
| SO | BVBS1296 | BVBS1296S005 | N | 10 Apr 2015 | 3 - 4 | SW8270C-SIM | PAH | Chrysene | 13 = | 5.7 | 11 | | µg/kg | | NC |
| SO | BVBS1296 | BVBS1296S005 | N | 10 Apr 2015 | 3 - 4 | SW8270C-SIM | PAH | Dibenzo(a,h)anthracene | 11 U | 5.7 | 11 | | µg/kg | | NC |
| SO | BVBS1296 | BVBS1296S005 | N | 10 Apr 2015 | 3 - 4 | SW8270C-SIM | PAH | Fluoranthene | 59 = | 5.7 | 11 | 5.2 | µg/kg | X | Y |
| SO | BVBS1296 | BVBS1296S005 | N | 10 Apr 2015 | 3 - 4 | SW8270C-SIM | PAH | Fluorene | 11 U | 5.7 | 11 | 3.8 | µg/kg | X | RL |
| SO | BVBS1296 | BVBS1296S005 | N | 10 Apr 2015 | 3 - 4 | SW8270C-SIM | PAH | Indeno(1,2,3-cd)pyrene | 19 = | 5.7 | 11 | | µg/kg | | NC |
| SO | BVBS1296 | BVBS1296S005 | N | 10 Apr 2015 | 3 - 4 | SW8270C-SIM | PAH | Naphthalene | 6.4 J | 5.7 | 11 | 3.6 | µg/kg | X | Y |
| SO | BVBS1296 | BVBS1296S005 | N | 10 Apr 2015 | 3 - 4 | SW8270C-SIM | PAH | PAHTEQM | 16.5 = | | | 4.47 | µg/kg | X | Y |
| SO | BVBS1296 | BVBS1296S005 | N | 10 Apr 2015 | 3 - 4 | SW8270C-SIM | PAH | Phenanthrene | 12 = | 5.7 | 11 | 3.9 | µg/kg | X | Y |
| SO | BVBS1296 | BVBS1296S005 | N | 10 Apr 2015 | 3 - 4 | SW8270C-SIM | PAH | Pyrene | 95 = | 5.7 | 11 | 5.6 | µg/kg | X | Y |
| SO | BVBS1296 | BVBS1296S005 | N | 10 Apr 2015 | 3 - 4 | SW8270C-SIM | PHTH | Bis(2-ethylhexyl)phthalate | 2000 = | 11 | 23 | 61 | µg/kg | X | Y |
| SO | BVBS1296 | BVBS1296S005 | N | 10 Apr 2015 | 3 - 4 | SW8270C-SIM | PHTH | Butyl benzyl phthalate | 23 U | 11 | 23 | 100 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S005 | N | 10 Apr 2015 | 3 - 4 | SW8270C-SIM | PHTH | Diethyl phthalate | 23 U | 11 | 23 | 27 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S005 | N | 10 Apr 2015 | 3 - 4 | SW8270C-SIM | PHTH | Dimethyl phthalate | 23 U | 11 | 23 | 27 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S005 | N | 10 Apr 2015 | 3 - 4 | SW8270C-SIM | PHTH | Di-n-butyl phthalate | 23 U | 11 | 23 | 27 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S005 | N | 10 Apr 2015 | 3 - 4 | SW8270C-SIM | PHTH | Di-n-octyl phthalate | 12 J | 11 | 23 | 27 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S005 | N | 10 Apr 2015 | 3 - 4 | SW8260B | SVOC | Diisopropyl ether | 1 U | 1 | 10 | 10 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S005 | N | 10 Apr 2015 | 3 - 4 | SW8270C-SIM | SVOC | n-Nitrosodimethylamine | 23 U | 11 | 23 | 10 | µg/kg | X | RL |
| SO | BVBS1296 | BVBS1296S005 | N | 10 Apr 2015 | 3 - 4 | SW8260B | SVOC | tert-Amyl methyl ether | 1 U | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S005 | N | 10 Apr 2015 | 3 - 4 | SW8260B | SVOC | tert-Butyl ethyl ether | 1 U | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S005 | N | 10 Apr 2015 | 3 - 4 | SW8260B | VOC | 1,1,1,2-Tetrachloroethane | 1 U | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S005 | N | 10 Apr 2015 | 3 - 4 | SW8260B | VOC | 1,1,1-Trichloroethane | 1 U | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S005 | N | 10 Apr 2015 | 3 - 4 | SW8260B | VOC | 1,1,2,2-Tetrachloroethane | 1 U | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S005 | N | 10 Apr 2015 | 3 - 4 | SW8260B | VOC | 1,1,2-Trichloro-1,2,2-trifluoroethane | 2.1 U | 2.1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S005 | N | 10 Apr 2015 | 3 - 4 | SW8260B | VOC | 1,1,2-Trichloroethane | 1 U | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S005 | N | 10 Apr 2015 | 3 - 4 | SW8260B | VOC | 1,1-Dichloroethane | 1 U | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S005 | N | 10 Apr 2015 | 3 - 4 | SW8260B | VOC | 1,1-Dichloroethene | 1 U | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S005 | N | 10 Apr 2015 | 3 - 4 | SW8260B | VOC | 1,1-Dichloropropene | 1 U | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S005 | N | 10 Apr 2015 | 3 - 4 | SW8260B | VOC | 1,2,3-Trichlorobenzene | 2.1 U | 2.1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S005 | N | 10 Apr 2015 | 3 - 4 | SW8260B | VOC | 1,2,3-Trichloropropane | 2.1 U | 2.1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S005 | N | 10 Apr 2015 | 3 - 4 | SW8260B | VOC | 1,2,4-Trichlorobenzene | 2.1 U | 2.1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S005 | N | 10 Apr 2015 | 3 - 4 | SW8260B | VOC | 1,2,4-Trimethylbenzene | 1 U | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S005 | N | 10 Apr 2015 | 3 - 4 | SW8260B | VOC | 1,2-Dibromo-3-chloropropane | 2.1 U | 2.1 | 10 | 10 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S005 | N | 10 Apr 2015 | 3 - 4 | SW8260B | VOC | 1,2-Dibromoethane (EDB) | 1 U | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S005 | N | 10 Apr 2015 | 3 - 4 | SW8260B | VOC | 1,2-Dichlorobenzene | 1 U | 1 | 5.1 | 5 | µg/kg | | N |

APPENDIX E-2

**Analytical Data 2015 Biovent Sampling**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | SL | Units | Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1296 | BVBS1296S005 | N | 10 Apr 2015 | 3 - 4 | SW8260B | VOC | 1,2-Dichloroethane | 1 U | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S005 | N | 10 Apr 2015 | 3 - 4 | SW8260B | VOC | 1,2-Dichloropropane | 1 U | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S005 | N | 10 Apr 2015 | 3 - 4 | SW8260B | VOC | 1,3,5-Trimethylbenzene | 1 U | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S005 | N | 10 Apr 2015 | 3 - 4 | SW8260B | VOC | 1,3-Dichlorobenzene | 1 U | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S005 | N | 10 Apr 2015 | 3 - 4 | SW8260B | VOC | 1,3-Dichloropropane | 1 U | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S005 | N | 10 Apr 2015 | 3 - 4 | SW8260B | VOC | 1,4-Dichlorobenzene | 1 U | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S005 | N | 10 Apr 2015 | 3 - 4 | SW8260B | VOC | 2,2-Dichloropropane | 2.1 U | 2.1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S005 | N | 10 Apr 2015 | 3 - 4 | SW8260B | VOC | 2-Butanone (MEK) | 5.1 U | 5.1 | 21 | 20 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S005 | N | 10 Apr 2015 | 3 - 4 | SW8260B | VOC | 2-Chloro-1,1,1-trifluoroethane | 2.1 U | 2.1 | 10 | 10 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S005 | N | 10 Apr 2015 | 3 - 4 | SW8260B | VOC | 2-Chloroethyl vinyl ether | 2.1 U | 2.1 | 10 | 10 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S005 | N | 10 Apr 2015 | 3 - 4 | SW8260B | VOC | 2-Chlorotoluene | 1 U | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S005 | N | 10 Apr 2015 | 3 - 4 | SW8260B | VOC | 2-Hexanone | 5.1 U | 5.1 | 10 | 10 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S005 | N | 10 Apr 2015 | 3 - 4 | SW8260B | VOC | 4-Chlorotoluene | 1 U | 1 | 10 | 10 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S005 | N | 10 Apr 2015 | 3 - 4 | SW8260B | VOC | 4-Methyl-2-pentanone (MIBK) | 5.1 U | 5.1 | 10 | 10 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S005 | N | 10 Apr 2015 | 3 - 4 | SW8260B | VOC | Acetone | 11 J | 5.1 | 21 | 20 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S005 | N | 10 Apr 2015 | 3 - 4 | SW8260B | VOC | Benzene | 1 U | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S005 | N | 10 Apr 2015 | 3 - 4 | SW8260B | VOC | Bromobenzene | 1 U | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S005 | N | 10 Apr 2015 | 3 - 4 | SW8260B | VOC | Bromochloromethane | 1 U | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S005 | N | 10 Apr 2015 | 3 - 4 | SW8260B | VOC | Bromodichloromethane | 1 U | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S005 | N | 10 Apr 2015 | 3 - 4 | SW8260B | VOC | Bromoform | 2.1 U | 2.1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S005 | N | 10 Apr 2015 | 3 - 4 | SW8260B | VOC | Bromomethane | 2.1 U | 2.1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S005 | N | 10 Apr 2015 | 3 - 4 | SW8260B | VOC | Carbon tetrachloride | 1 U | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S005 | N | 10 Apr 2015 | 3 - 4 | SW8260B | VOC | Chlorobenzene | 1 U | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S005 | N | 10 Apr 2015 | 3 - 4 | SW8260B | VOC | Chloroethane | 2.1 U | 2.1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S005 | N | 10 Apr 2015 | 3 - 4 | SW8260B | VOC | Chloromethane | 2.1 U | 2.1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S005 | N | 10 Apr 2015 | 3 - 4 | SW8260B | VOC | Chlorotrifluoroethylene | 2.1 U | 2.1 | 10 | 10 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S005 | N | 10 Apr 2015 | 3 - 4 | SW8260B | VOC | cis-1,2-Dichloroethene | 1 U | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S005 | N | 10 Apr 2015 | 3 - 4 | SW8260B | VOC | cis-1,3-Dichloropropene | 1 U | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S005 | N | 10 Apr 2015 | 3 - 4 | SW8260B | VOC | Dibromochloromethane | 1 U | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S005 | N | 10 Apr 2015 | 3 - 4 | SW8260B | VOC | Dibromomethane | 1 U | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S005 | N | 10 Apr 2015 | 3 - 4 | SW8260B | VOC | Dichlorodifluoromethane | 2.1 U | 2.1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S005 | N | 10 Apr 2015 | 3 - 4 | SW8260B | VOC | Ethylbenzene | 1 U | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S005 | N | 10 Apr 2015 | 3 - 4 | SW8260B | VOC | Hexachlorobutadiene | 2.1 U | 2.1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S005 | N | 10 Apr 2015 | 3 - 4 | SW8260B | VOC | Isopropylbenzene | 1 U | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S005 | N | 10 Apr 2015 | 3 - 4 | SW8260B | VOC | m,p-Xylenes | 2.1 U | 2.1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S005 | N | 10 Apr 2015 | 3 - 4 | SW8260B | VOC | Methylene chloride | 2.1 U | 2.1 | 10 | 10 | µg/kg | | N |

APPENDIX E-2

**Analytical Data 2015 Biovent Sampling**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | SL | Units | Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1296 | BVBS1296S005 | N | 10 Apr 2015 | 3 - 4 | SW8260B | VOC | Methyl-tert-butyl Ether (MTBE) | 1 U | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S005 | N | 10 Apr 2015 | 3 - 4 | SW8260B | VOC | n-butylbenzene | 1 U | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S005 | N | 10 Apr 2015 | 3 - 4 | SW8260B | VOC | n-Propylbenzene | 1 U | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S005 | N | 10 Apr 2015 | 3 - 4 | SW8260B | VOC | o-Xylene | 1 U | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S005 | N | 10 Apr 2015 | 3 - 4 | SW8260B | VOC | p-Isopropyltoluene | 1 U | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S005 | N | 10 Apr 2015 | 3 - 4 | SW8260B | VOC | sec-Butylbenzene | 1 U | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S005 | N | 10 Apr 2015 | 3 - 4 | SW8260B | VOC | Styrene | 1 U | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S005 | N | 10 Apr 2015 | 3 - 4 | SW8260B | VOC | tert-Butanol (TBA) | 10 U | 10 | 51 | | µg/kg | | NC |
| SO | BVBS1296 | BVBS1296S005 | N | 10 Apr 2015 | 3 - 4 | SW8260B | VOC | tert-Butylbenzene | 1 U | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S005 | N | 10 Apr 2015 | 3 - 4 | SW8260B | VOC | Tetrachloroethene | 1 U | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S005 | N | 10 Apr 2015 | 3 - 4 | SW8260B | VOC | Toluene | 1 U | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S005 | N | 10 Apr 2015 | 3 - 4 | SW8260B | VOC | trans-1,2-Dichloroethene | 1 U | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S005 | N | 10 Apr 2015 | 3 - 4 | SW8260B | VOC | trans-1,3-Dichloropropene | 1 U | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S005 | N | 10 Apr 2015 | 3 - 4 | SW8260B | VOC | Trichloroethene | 1 U | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S005 | N | 10 Apr 2015 | 3 - 4 | SW8260B | VOC | Trichlorofluoromethane | 2.1 U | 2.1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S005 | N | 10 Apr 2015 | 3 - 4 | SW8260B | VOC | Trichloromethane (Chloroform) | 1 U | 1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S005 | N | 10 Apr 2015 | 3 - 4 | SW8260B | VOC | Vinyl chloride | 2.1 U | 2.1 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S006 | N | 10 Apr 2015 | 7 - 8 | SW9045D | GENCHEM | pH | 8 = | | | | pH units | | NC |
| SO | BVBS1296 | BVBS1296S006 | N | 10 Apr 2015 | 7 - 8 | M8015D | HC | Diesel Range Organics (C12-C14) | 5500 U | 2800 | 5500 | 5000 | µg/kg | X | N |
| SO | BVBS1296 | BVBS1296S006 | N | 10 Apr 2015 | 7 - 8 | M8015D | HC | Diesel Range Organics (C15-C20) | 5500 U | 2800 | 5500 | 5000 | µg/kg | X | N |
| SO | BVBS1296 | BVBS1296S006 | N | 10 Apr 2015 | 7 - 8 | M8015D | HC | Diesel Range Organics (C21-C30) | 5500 U | 2800 | 5500 | 5000 | µg/kg | X | N |
| SO | BVBS1296 | BVBS1296S006 | N | 10 Apr 2015 | 7 - 8 | M8015D | HC | Diesel Range Organics (C8-C11) | 5500 U | 2800 | 5500 | 1000 | µg/kg | X | RL |
| SO | BVBS1296 | BVBS1296S006 | N | 10 Apr 2015 | 7 - 8 | SW8015B | HC | GRO (C4-C12) | 970 U | 490 | 970 | 1000 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S006 | N | 10 Apr 2015 | 7 - 8 | M8015D | HC | ORO (C31-C40) | 11000 U | 5500 | 11000 | 10000 | µg/kg | X | N |
| SO | BVBS1296 | BVBS1296S006 | N | 10 Apr 2015 | 7 - 8 | M8015D | HC | TOTAL EFH(C8-C40) | 5500 U | 2800 | 5500 | 10000 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S006 | N | 10 Apr 2015 | 7 - 8 | SW8270C-SIM | PAH | 1-Methylnaphthalene | 11 U | 5.5 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1296 | BVBS1296S006 | N | 10 Apr 2015 | 7 - 8 | SW8270C-SIM | PAH | 2-Methylnaphthalene | 11 U | 5.5 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1296 | BVBS1296S006 | N | 10 Apr 2015 | 7 - 8 | SW8270C-SIM | PAH | Acenaphthene | 11 U | 5.5 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1296 | BVBS1296S006 | N | 10 Apr 2015 | 7 - 8 | SW8270C-SIM | PAH | Acenaphthylene | 11 U | 5.5 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1296 | BVBS1296S006 | N | 10 Apr 2015 | 7 - 8 | SW8270C-SIM | PAH | Anthracene | 11 U | 5.5 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1296 | BVBS1296S006 | N | 10 Apr 2015 | 7 - 8 | SW8270C-SIM | PAH | Benzo(a)anthracene | 11 U | 5.5 | 11 | | µg/kg | | NC |
| SO | BVBS1296 | BVBS1296S006 | N | 10 Apr 2015 | 7 - 8 | SW8270C-SIM | PAH | Benzo(a)pyrene | 11 U | 5.5 | 11 | | µg/kg | | NC |
| SO | BVBS1296 | BVBS1296S006 | N | 10 Apr 2015 | 7 - 8 | SW8270C-SIM | PAH | Benzo(b)fluoranthene | 11 U | 5.5 | 11 | | µg/kg | | NC |
| SO | BVBS1296 | BVBS1296S006 | N | 10 Apr 2015 | 7 - 8 | SW8270C-SIM | PAH | Benzo(ghi)perylene | 11 U | 5.5 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1296 | BVBS1296S006 | N | 10 Apr 2015 | 7 - 8 | SW8270C-SIM | PAH | Benzo(k)fluoranthene | 11 U | 5.5 | 11 | | µg/kg | | NC |
| SO | BVBS1296 | BVBS1296S006 | N | 10 Apr 2015 | 7 - 8 | SW8270C-SIM | PAH | Chrysene | 11 U | 5.5 | 11 | | µg/kg | | NC |

APPENDIX E-2

**Analytical Data 2015 Biovent Sampling**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | SL | Units | Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1296 | BVBS1296S006 | N | 10 Apr 2015 | 7 - 8 | SW8270C-SIM | PAH | Dibenzo(a,h)anthracene | 11 U | 5.5 | 11 | | µg/kg | | NC |
| SO | BVBS1296 | BVBS1296S006 | N | 10 Apr 2015 | 7 - 8 | SW8270C-SIM | PAH | Fluoranthene | 11 U | 5.5 | 11 | 5.2 | µg/kg | X | RL |
| SO | BVBS1296 | BVBS1296S006 | N | 10 Apr 2015 | 7 - 8 | SW8270C-SIM | PAH | Fluorene | 11 U | 5.5 | 11 | 3.8 | µg/kg | X | RL |
| SO | BVBS1296 | BVBS1296S006 | N | 10 Apr 2015 | 7 - 8 | SW8270C-SIM | PAH | Indeno(1,2,3-cd)pyrene | 11 U | 5.5 | 11 | | µg/kg | | NC |
| SO | BVBS1296 | BVBS1296S006 | N | 10 Apr 2015 | 7 - 8 | SW8270C-SIM | PAH | Naphthalene | 11 U | 5.5 | 11 | 3.6 | µg/kg | X | RL |
| SO | BVBS1296 | BVBS1296S006 | N | 10 Apr 2015 | 7 - 8 | SW8270C-SIM | PAH | PAHTEQM | 0 U | | | 4.47 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S006 | N | 10 Apr 2015 | 7 - 8 | SW8270C-SIM | PAH | Phenanthrene | 11 U | 5.5 | 11 | 3.9 | µg/kg | X | RL |
| SO | BVBS1296 | BVBS1296S006 | N | 10 Apr 2015 | 7 - 8 | SW8270C-SIM | PAH | Pyrene | 11 U | 5.5 | 11 | 5.6 | µg/kg | X | N |
| SO | BVBS1296 | BVBS1296S006 | N | 10 Apr 2015 | 7 - 8 | SW8270C-SIM | PHTH | Bis(2-ethylhexyl)phthalate | 22 U | 11 | 22 | 61 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S006 | N | 10 Apr 2015 | 7 - 8 | SW8270C-SIM | PHTH | Butyl benzyl phthalate | 22 U | 11 | 22 | 100 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S006 | N | 10 Apr 2015 | 7 - 8 | SW8270C-SIM | PHTH | Diethyl phthalate | 22 U | 11 | 22 | 27 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S006 | N | 10 Apr 2015 | 7 - 8 | SW8270C-SIM | PHTH | Dimethyl phthalate | 22 U | 11 | 22 | 27 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S006 | N | 10 Apr 2015 | 7 - 8 | SW8270C-SIM | PHTH | Di-n-butyl phthalate | 22 U | 11 | 22 | 27 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S006 | N | 10 Apr 2015 | 7 - 8 | SW8270C-SIM | PHTH | Di-n-octyl phthalate | 22 U | 11 | 22 | 27 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S006 | N | 10 Apr 2015 | 7 - 8 | SW8260B | SVOC | Diisopropyl ether | 0.97 U | 0.97 | 9.7 | 10 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S006 | N | 10 Apr 2015 | 7 - 8 | SW8270C-SIM | SVOC | n-Nitrosodimethylamine | 22 U | 11 | 22 | 10 | µg/kg | X | RL |
| SO | BVBS1296 | BVBS1296S006 | N | 10 Apr 2015 | 7 - 8 | SW8260B | SVOC | tert-Amyl methyl ether | 0.97 U | 0.97 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S006 | N | 10 Apr 2015 | 7 - 8 | SW8260B | SVOC | tert-Butyl ethyl ether | 0.97 U | 0.97 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S006 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | 1,1,1,2-Tetrachloroethane | 0.97 U | 0.97 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S006 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | 1,1,1-Trichloroethane | 0.97 U | 0.97 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S006 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | 1,1,2,2-Tetrachloroethane | 0.97 U | 0.97 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S006 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | 1,1,2-Trichloro-1,2,2-trifluoroethane | 1.9 U | 1.9 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S006 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | 1,1,2-Trichloroethane | 0.97 U | 0.97 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S006 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | 1,1-Dichloroethane | 0.97 U | 0.97 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S006 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | 1,1-Dichloroethene | 0.97 U | 0.97 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S006 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | 1,1-Dichloropropene | 0.97 U | 0.97 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S006 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | 1,2,3-Trichlorobenzene | 1.9 U | 1.9 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S006 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | 1,2,3-Trichloropropane | 1.9 U | 1.9 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S006 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | 1,2,4-Trichlorobenzene | 1.9 U | 1.9 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S006 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | 1,2,4-Trimethylbenzene | 0.97 U | 0.97 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S006 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | 1,2-Dibromo-3-chloropropane | 1.9 U | 1.9 | 9.7 | 10 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S006 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | 1,2-Dibromoethane (EDB) | 0.97 U | 0.97 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S006 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | 1,2-Dichlorobenzene | 0.97 U | 0.97 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S006 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | 1,2-Dichloroethane | 0.97 U | 0.97 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S006 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | 1,2-Dichloropropane | 0.97 U | 0.97 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S006 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | 1,3,5-Trimethylbenzene | 0.97 U | 0.97 | 4.9 | 5 | µg/kg | | N |

APPENDIX E-2

**Analytical Data 2015 Biovent Sampling**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | SL | Units | Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1296 | BVBS1296S006 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | 1,3-Dichlorobenzene | 0.97 U | 0.97 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S006 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | 1,3-Dichloropropane | 0.97 U | 0.97 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S006 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | 1,4-Dichlorobenzene | 0.97 U | 0.97 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S006 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | 2,2-Dichloropropane | 1.9 U | 1.9 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S006 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | 2-Butanone (MEK) | 4.9 U | 4.9 | 19 | 20 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S006 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | 2-Chloro-1,1,1-trifluoroethane | 1.9 U | 1.9 | 9.7 | 10 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S006 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | 2-Chloroethyl vinyl ether | 1.9 U | 1.9 | 9.7 | 10 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S006 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | 2-Chlorotoluene | 0.97 U | 0.97 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S006 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | 2-Hexanone | 4.9 U | 4.9 | 9.7 | 10 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S006 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | 4-Chlorotoluene | 0.97 U | 0.97 | 9.7 | 10 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S006 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | 4-Methyl-2-pentanone (MIBK) | 4.9 U | 4.9 | 9.7 | 10 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S006 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | Acetone | 21 = | 4.9 | 19 | 20 | µg/kg | X | Y |
| SO | BVBS1296 | BVBS1296S006 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | Benzene | 0.97 U | 0.97 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S006 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | Bromobenzene | 0.97 U | 0.97 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S006 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | Bromochloromethane | 0.97 U | 0.97 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S006 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | Bromodichloromethane | 0.97 U | 0.97 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S006 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | Bromoform | 1.9 U | 1.9 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S006 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | Bromomethane | 1.9 U | 1.9 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S006 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | Carbon tetrachloride | 0.97 U | 0.97 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S006 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | Chlorobenzene | 0.97 U | 0.97 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S006 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | Chloroethane | 1.9 U | 1.9 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S006 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | Chloromethane | 1.9 U | 1.9 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S006 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | Chlorotrifluoroethylene | 1.9 U | 1.9 | 9.7 | 10 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S006 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | cis-1,2-Dichloroethene | 0.97 U | 0.97 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S006 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | cis-1,3-Dichloropropene | 0.97 U | 0.97 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S006 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | Dibromochloromethane | 0.97 U | 0.97 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S006 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | Dibromomethane | 0.97 U | 0.97 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S006 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | Dichlorodifluoromethane | 1.9 U | 1.9 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S006 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | Ethylbenzene | 0.97 U | 0.97 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S006 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | Hexachlorobutadiene | 1.9 U | 1.9 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S006 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | Isopropylbenzene | 0.97 U | 0.97 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S006 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | m,p-Xylenes | 1.9 U | 1.9 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S006 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | Methylene chloride | 1.9 U | 1.9 | 9.7 | 10 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S006 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | Methyl-tert-butyl Ether (MTBE) | 0.97 U | 0.97 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S006 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | n-butylbenzene | 0.97 U | 0.97 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S006 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | n-Propylbenzene | 0.97 U | 0.97 | 4.9 | 5 | µg/kg | | N |

APPENDIX E-2

**Analytical Data 2015 Biovent Sampling**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | SL | Units | Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1296 | BVBS1296S006 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | o-Xylene | 0.97 U | 0.97 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S006 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | p-Isopropyltoluene | 0.97 U | 0.97 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S006 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | sec-Butylbenzene | 0.97 U | 0.97 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S006 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | Styrene | 0.97 U | 0.97 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S006 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | tert-Butanol (TBA) | 9.7 U | 9.7 | 49 | | µg/kg | | NC |
| SO | BVBS1296 | BVBS1296S006 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | tert-Butylbenzene | 0.97 U | 0.97 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S006 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | Tetrachloroethene | 0.97 U | 0.97 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S006 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | Toluene | 0.97 U | 0.97 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S006 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | trans-1,2-Dichloroethene | 0.97 U | 0.97 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S006 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | trans-1,3-Dichloropropene | 0.97 U | 0.97 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S006 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | Trichloroethene | 0.97 U | 0.97 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S006 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | Trichlorofluoromethane | 1.9 U | 1.9 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S006 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | Trichloromethane (Chloroform) | 0.97 U | 0.97 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1296 | BVBS1296S006 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | Vinyl chloride | 1.9 U | 1.9 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S001 | N | 3 Mar 2015 | 4 - 5 | SW9045D | GENCHEM | pH | 7.23 = | | | | pH units | | NC |
| SO | BVBS1297 | BVBS1297S001 | N | 3 Mar 2015 | 4 - 5 | SW8015B | HC | Diesel Range Organics (C12-C14) | 4000000 = | 59000 | 1E+05 | 5000 | µg/kg | X | Y |
| SO | BVBS1297 | BVBS1297S001 | N | 3 Mar 2015 | 4 - 5 | SW8015B | HC | Diesel Range Organics (C15-C20) | 2800000 = | 59000 | 1E+05 | 5000 | µg/kg | X | Y |
| SO | BVBS1297 | BVBS1297S001 | N | 3 Mar 2015 | 4 - 5 | SW8015B | HC | Diesel Range Organics (C21-C30) | 120000 U | 59000 | 1E+05 | 5000 | µg/kg | X | RL |
| SO | BVBS1297 | BVBS1297S001 | N | 3 Mar 2015 | 4 - 5 | SW8015B | HC | Diesel Range Organics (C8-C11) | 1100000 = | 59000 | 1E+05 | 1000 | µg/kg | X | Y |
| SO | BVBS1297 | BVBS1297S001 | N | 3 Mar 2015 | 4 - 5 | SW8015B | HC | GRO (C4-C12) | 1300000 = | 9600 | 19000 | 1000 | µg/kg | X | Y |
| SO | BVBS1297 | BVBS1297S001 | N | 3 Mar 2015 | 4 - 5 | SW8015B | HC | ORO (C31-C40) | 240000 U | 1E+05 | 2E+05 | 10000 | µg/kg | X | RL |
| SO | BVBS1297 | BVBS1297S001 | N | 3 Mar 2015 | 4 - 5 | SW8015B | HC | TOTAL EFH(C8-C40) | 7900000 = | 59000 | 1E+05 | 10000 | µg/kg | X | Y |
| SO | BVBS1297 | BVBS1297S001 | N | 3 Mar 2015 | 4 - 5 | SW8270C-SIM | PAH | 1-Methylnaphthalene | 12 U | 5.9 | 12 | 2.5 | µg/kg | X | RL |
| SO | BVBS1297 | BVBS1297S001 | N | 3 Mar 2015 | 4 - 5 | SW8270C-SIM | PAH | 2-Methylnaphthalene | 12 U | 5.9 | 12 | 2.5 | µg/kg | X | RL |
| SO | BVBS1297 | BVBS1297S001 | N | 3 Mar 2015 | 4 - 5 | SW8270C-SIM | PAH | Acenaphthene | 170 J | 5.9 | 12 | 2.5 | µg/kg | X | Y |
| SO | BVBS1297 | BVBS1297S001 | N | 3 Mar 2015 | 4 - 5 | SW8270C-SIM | PAH | Acenaphthylene | 12 U | 5.9 | 12 | 2.5 | µg/kg | X | RL |
| SO | BVBS1297 | BVBS1297S001 | N | 3 Mar 2015 | 4 - 5 | SW8270C-SIM | PAH | Anthracene | 60 J | 5.9 | 12 | 2.5 | µg/kg | X | Y |
| SO | BVBS1297 | BVBS1297S001 | N | 3 Mar 2015 | 4 - 5 | SW8270C-SIM | PAH | Benzo(a)anthracene | 54 J | 5.9 | 12 | | µg/kg | | NC |
| SO | BVBS1297 | BVBS1297S001 | N | 3 Mar 2015 | 4 - 5 | SW8270C-SIM | PAH | Benzo(a)pyrene | 58 J | 5.9 | 12 | | µg/kg | | NC |
| SO | BVBS1297 | BVBS1297S001 | N | 3 Mar 2015 | 4 - 5 | SW8270C-SIM | PAH | Benzo(b)fluoranthene | 65 J | 5.9 | 12 | | µg/kg | | NC |
| SO | BVBS1297 | BVBS1297S001 | N | 3 Mar 2015 | 4 - 5 | SW8270C-SIM | PAH | Benzo(ghi)perylene | 98 J | 5.9 | 12 | 2.5 | µg/kg | X | Y |
| SO | BVBS1297 | BVBS1297S001 | N | 3 Mar 2015 | 4 - 5 | SW8270C-SIM | PAH | Benzo(k)fluoranthene | 19 J | 5.9 | 12 | | µg/kg | | NC |
| SO | BVBS1297 | BVBS1297S001 | N | 3 Mar 2015 | 4 - 5 | SW8270C-SIM | PAH | Chrysene | 39 J | 5.9 | 12 | | µg/kg | | NC |
| SO | BVBS1297 | BVBS1297S001 | N | 3 Mar 2015 | 4 - 5 | SW8270C-SIM | PAH | Dibenzo(a,h)anthracene | 12 U | 5.9 | 12 | | µg/kg | | NC |
| SO | BVBS1297 | BVBS1297S001 | N | 3 Mar 2015 | 4 - 5 | SW8270C-SIM | PAH | Fluoranthene | 290 J | 5.9 | 12 | 5.2 | µg/kg | X | Y |
| SO | BVBS1297 | BVBS1297S001 | N | 3 Mar 2015 | 4 - 5 | SW8270C-SIM | PAH | Fluorene | 110 J | 5.9 | 12 | 3.8 | µg/kg | X | Y |

APPENDIX E-2

**Analytical Data 2015 Biovent Sampling**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | SL | Units | Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1297 | BVBS1297S001 | N | 3 Mar 2015 | 4 - 5 | SW8270C-SIM | PAH | Indeno(1,2,3-cd)pyrene | 49 J | 5.9 | 12 | | µg/kg | | NC |
| SO | BVBS1297 | BVBS1297S001 | N | 3 Mar 2015 | 4 - 5 | SW8270C-SIM | PAH | Naphthalene | 12 U | 5.9 | 12 | 3.6 | µg/kg | X | RL |
| SO | BVBS1297 | BVBS1297S001 | N | 3 Mar 2015 | 4 - 5 | SW8270C-SIM | PAH | PAHTEQM | 77.09 = | | | 4.47 | µg/kg | X | Y |
| SO | BVBS1297 | BVBS1297S001 | N | 3 Mar 2015 | 4 - 5 | SW8270C-SIM | PAH | Phenanthrene | 160 J | 5.9 | 12 | 3.9 | µg/kg | X | Y |
| SO | BVBS1297 | BVBS1297S001 | N | 3 Mar 2015 | 4 - 5 | SW8270C-SIM | PAH | Pyrene | 380 J | 5.9 | 12 | 5.6 | µg/kg | X | Y |
| SO | BVBS1297 | BVBS1297S001 | N | 3 Mar 2015 | 4 - 5 | SW8270C-SIM | PHTH | Bis(2-ethylhexyl)phthalate | 1100 J | 12 | 24 | 61 | µg/kg | X | Y |
| SO | BVBS1297 | BVBS1297S001 | N | 3 Mar 2015 | 4 - 5 | SW8270C-SIM | PHTH | Butyl benzyl phthalate | 24 U | 12 | 24 | 100 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S001 | N | 3 Mar 2015 | 4 - 5 | SW8270C-SIM | PHTH | Diethyl phthalate | 24 U | 12 | 24 | 27 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S001 | N | 3 Mar 2015 | 4 - 5 | SW8270C-SIM | PHTH | Dimethyl phthalate | 24 U | 12 | 24 | 27 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S001 | N | 3 Mar 2015 | 4 - 5 | SW8270C-SIM | PHTH | Di-n-butyl phthalate | 24 U | 12 | 24 | 27 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S001 | N | 3 Mar 2015 | 4 - 5 | SW8270C-SIM | PHTH | Di-n-octyl phthalate | 24 U | 12 | 24 | 27 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S001 | N | 3 Mar 2015 | 4 - 5 | SW8260B | SVOC | Diisopropyl ether | 0.93 UJ | 0.93 | 9.3 | 10 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S001 | N | 3 Mar 2015 | 4 - 5 | SW8270C-SIM | SVOC | n-Nitrosodimethylamine | 24 U | 12 | 24 | 10 | µg/kg | X | RL |
| SO | BVBS1297 | BVBS1297S001 | N | 3 Mar 2015 | 4 - 5 | SW8260B | SVOC | tert-Amyl methyl ether | 0.93 UJ | 0.93 | 4.6 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S001 | N | 3 Mar 2015 | 4 - 5 | SW8260B | SVOC | tert-Butyl ethyl ether | 0.93 UJ | 0.93 | 4.6 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S001 | N | 3 Mar 2015 | 4 - 5 | SW8260B | VOC | 1,1,1,2-Tetrachloroethane | 0.93 UJ | 0.93 | 4.6 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S001 | N | 3 Mar 2015 | 4 - 5 | SW8260B | VOC | 1,1,1-Trichloroethane | 0.93 UJ | 0.93 | 4.6 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S001 | N | 3 Mar 2015 | 4 - 5 | SW8260B | VOC | 1,1,2,2-Tetrachloroethane | 0.93 UJ | 0.93 | 4.6 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S001 | N | 3 Mar 2015 | 4 - 5 | SW8260B | VOC | 1,1,2-Trichloro-1,2,2-trifluoroethane | 1.9 UJ | 1.9 | 4.6 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S001 | N | 3 Mar 2015 | 4 - 5 | SW8260B | VOC | 1,1,2-Trichloroethane | 0.93 UJ | 0.93 | 4.6 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S001 | N | 3 Mar 2015 | 4 - 5 | SW8260B | VOC | 1,1-Dichloroethane | 0.93 UJ | 0.93 | 4.6 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S001 | N | 3 Mar 2015 | 4 - 5 | SW8260B | VOC | 1,1-Dichloroethene | 0.93 UJ | 0.93 | 4.6 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S001 | N | 3 Mar 2015 | 4 - 5 | SW8260B | VOC | 1,1-Dichloropropene | 0.93 UJ | 0.93 | 4.6 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S001 | N | 3 Mar 2015 | 4 - 5 | SW8260B | VOC | 1,2,3-Trichlorobenzene | 1.9 UJ | 1.9 | 4.6 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S001 | N | 3 Mar 2015 | 4 - 5 | SW8260B | VOC | 1,2,3-Trichloropropane | 1.9 UJ | 1.9 | 4.6 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S001 | N | 3 Mar 2015 | 4 - 5 | SW8260B | VOC | 1,2,4-Trichlorobenzene | 1.9 UJ | 1.9 | 4.6 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S001 | N | 3 Mar 2015 | 4 - 5 | SW8260B | VOC | 1,2,4-Trimethylbenzene | 8.1 J | 0.93 | 4.6 | 5 | µg/kg | X | Y |
| SO | BVBS1297 | BVBS1297S001 | N | 3 Mar 2015 | 4 - 5 | SW8260B | VOC | 1,2-Dibromo-3-chloropropane | 1.9 UJ | 1.9 | 9.3 | 10 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S001 | N | 3 Mar 2015 | 4 - 5 | SW8260B | VOC | 1,2-Dibromoethane (EDB) | 0.93 UJ | 0.93 | 4.6 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S001 | N | 3 Mar 2015 | 4 - 5 | SW8260B | VOC | 1,2-Dichlorobenzene | 0.93 UJ | 0.93 | 4.6 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S001 | N | 3 Mar 2015 | 4 - 5 | SW8260B | VOC | 1,2-Dichloroethane | 0.93 UJ | 0.93 | 4.6 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S001 | N | 3 Mar 2015 | 4 - 5 | SW8260B | VOC | 1,2-Dichloropropane | 0.93 UJ | 0.93 | 4.6 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S001 | N | 3 Mar 2015 | 4 - 5 | SW8260B | VOC | 1,3,5-Trimethylbenzene | 0.93 UJ | 0.93 | 4.6 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S001 | N | 3 Mar 2015 | 4 - 5 | SW8260B | VOC | 1,3-Dichlorobenzene | 0.93 UJ | 0.93 | 4.6 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S001 | N | 3 Mar 2015 | 4 - 5 | SW8260B | VOC | 1,3-Dichloropropane | 0.93 UJ | 0.93 | 4.6 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S001 | N | 3 Mar 2015 | 4 - 5 | SW8260B | VOC | 1,4-Dichlorobenzene | 0.93 UJ | 0.93 | 4.6 | 5 | µg/kg | | N |

APPENDIX E-2

**Analytical Data 2015 Biovent Sampling**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | SL | Units | Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1297 | BVBS1297S001 | N | 3 Mar 2015 | 4 - 5 | SW8260B | VOC | 2,2-Dichloropropane | 1.9 UJ | 1.9 | 4.6 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S001 | N | 3 Mar 2015 | 4 - 5 | SW8260B | VOC | 2-Butanone (MEK) | 7.4 J | 4.6 | 19 | 20 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S001 | N | 3 Mar 2015 | 4 - 5 | SW8260B | VOC | 2-Chloro-1,1,1-trifluoroethane | 1.9 UJ | 1.9 | 9.3 | 10 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S001 | N | 3 Mar 2015 | 4 - 5 | SW8260B | VOC | 2-Chloroethyl vinyl ether | 1.9 UJ | 1.9 | 9.3 | 10 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S001 | N | 3 Mar 2015 | 4 - 5 | SW8260B | VOC | 2-Chlorotoluene | 0.93 UJ | 0.93 | 4.6 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S001 | N | 3 Mar 2015 | 4 - 5 | SW8260B | VOC | 2-Hexanone | 4.6 UJ | 4.6 | 9.3 | 10 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S001 | N | 3 Mar 2015 | 4 - 5 | SW8260B | VOC | 4-Chlorotoluene | 0.93 UJ | 0.93 | 9.3 | 10 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S001 | N | 3 Mar 2015 | 4 - 5 | SW8260B | VOC | 4-Methyl-2-pentanone (MIBK) | 4.6 UJ | 4.6 | 9.3 | 10 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S001 | N | 3 Mar 2015 | 4 - 5 | SW8260B | VOC | Acetone | 32 J | 4.6 | 19 | 20 | µg/kg | X | Y |
| SO | BVBS1297 | BVBS1297S001 | N | 3 Mar 2015 | 4 - 5 | SW8260B | VOC | Benzene | 0.93 UJ | 0.93 | 4.6 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S001 | N | 3 Mar 2015 | 4 - 5 | SW8260B | VOC | Bromobenzene | 0.93 UJ | 0.93 | 4.6 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S001 | N | 3 Mar 2015 | 4 - 5 | SW8260B | VOC | Bromochloromethane | 0.93 UJ | 0.93 | 4.6 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S001 | N | 3 Mar 2015 | 4 - 5 | SW8260B | VOC | Bromodichloromethane | 0.93 UJ | 0.93 | 4.6 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S001 | N | 3 Mar 2015 | 4 - 5 | SW8260B | VOC | Bromoform | 1.9 UJ | 1.9 | 4.6 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S001 | N | 3 Mar 2015 | 4 - 5 | SW8260B | VOC | Bromomethane | 1.9 UJ | 1.9 | 4.6 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S001 | N | 3 Mar 2015 | 4 - 5 | SW8260B | VOC | Carbon tetrachloride | 0.93 UJ | 0.93 | 4.6 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S001 | N | 3 Mar 2015 | 4 - 5 | SW8260B | VOC | Chlorobenzene | 0.93 UJ | 0.93 | 4.6 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S001 | N | 3 Mar 2015 | 4 - 5 | SW8260B | VOC | Chloroethane | 1.9 UJ | 1.9 | 4.6 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S001 | N | 3 Mar 2015 | 4 - 5 | SW8260B | VOC | Chloromethane | 1.9 UJ | 1.9 | 4.6 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S001 | N | 3 Mar 2015 | 4 - 5 | SW8260B | VOC | Chlorotrifluoroethylene | 1.9 UJ | 1.9 | 9.3 | 10 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S001 | N | 3 Mar 2015 | 4 - 5 | SW8260B | VOC | cis-1,2-Dichloroethene | 0.93 UJ | 0.93 | 4.6 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S001 | N | 3 Mar 2015 | 4 - 5 | SW8260B | VOC | cis-1,3-Dichloropropene | 0.93 UJ | 0.93 | 4.6 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S001 | N | 3 Mar 2015 | 4 - 5 | SW8260B | VOC | Dibromochloromethane | 0.93 UJ | 0.93 | 4.6 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S001 | N | 3 Mar 2015 | 4 - 5 | SW8260B | VOC | Dibromomethane | 0.93 UJ | 0.93 | 4.6 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S001 | N | 3 Mar 2015 | 4 - 5 | SW8260B | VOC | Dichlorodifluoromethane | 1.9 UJ | 1.9 | 4.6 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S001 | N | 3 Mar 2015 | 4 - 5 | SW8260B | VOC | Ethylbenzene | 0.93 UJ | 0.93 | 4.6 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S001 | N | 3 Mar 2015 | 4 - 5 | SW8260B | VOC | Hexachlorobutadiene | 1.9 UJ | 1.9 | 4.6 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S001 | N | 3 Mar 2015 | 4 - 5 | SW8260B | VOC | Isopropylbenzene | 1.7 J | 0.93 | 4.6 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S001 | N | 3 Mar 2015 | 4 - 5 | SW8260B | VOC | m,p-Xylenes | 1.9 UJ | 1.9 | 4.6 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S001 | N | 3 Mar 2015 | 4 - 5 | SW8260B | VOC | Methylene chloride | 1.9 UJ | 1.9 | 9.3 | 10 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S001 | N | 3 Mar 2015 | 4 - 5 | SW8260B | VOC | Methyl-tert-butyl Ether (MTBE) | 0.93 UJ | 0.93 | 4.6 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S001 | N | 3 Mar 2015 | 4 - 5 | SW8260B | VOC | n-butylbenzene | 0.93 UJ | 0.93 | 4.6 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S001 | N | 3 Mar 2015 | 4 - 5 | SW8260B | VOC | n-Propylbenzene | 4.1 J | 0.93 | 4.6 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S001 | N | 3 Mar 2015 | 4 - 5 | SW8260B | VOC | o-Xylene | 1.1 J | 0.93 | 4.6 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S001 | N | 3 Mar 2015 | 4 - 5 | SW8260B | VOC | p-Isopropyltoluene | 1.5 J | 0.93 | 4.6 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S001 | N | 3 Mar 2015 | 4 - 5 | SW8260B | VOC | sec-Butylbenzene | 9 J | 0.93 | 4.6 | 5 | µg/kg | X | Y |

APPENDIX E-2

**Analytical Data 2015 Biovent Sampling**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | SL | Units | Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1297 | BVBS1297S001 | N | 3 Mar 2015 | 4 - 5 | SW8260B | VOC | Styrene | 0.93 UJ | 0.93 | 4.6 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S001 | N | 3 Mar 2015 | 4 - 5 | SW8260B | VOC | tert-Butanol (TBA) | 9.3 UJ | 9.3 | 46 | | µg/kg | | NC |
| SO | BVBS1297 | BVBS1297S001 | N | 3 Mar 2015 | 4 - 5 | SW8260B | VOC | tert-Butylbenzene | 1.1 J | 0.93 | 4.6 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S001 | N | 3 Mar 2015 | 4 - 5 | SW8260B | VOC | Tetrachloroethene | 0.93 UJ | 0.93 | 4.6 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S001 | N | 3 Mar 2015 | 4 - 5 | SW8260B | VOC | Toluene | 0.93 UJ | 0.93 | 4.6 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S001 | N | 3 Mar 2015 | 4 - 5 | SW8260B | VOC | trans-1,2-Dichloroethene | 0.93 UJ | 0.93 | 4.6 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S001 | N | 3 Mar 2015 | 4 - 5 | SW8260B | VOC | trans-1,3-Dichloropropene | 0.93 UJ | 0.93 | 4.6 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S001 | N | 3 Mar 2015 | 4 - 5 | SW8260B | VOC | Trichloroethene | 1.3 J | 0.93 | 4.6 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S001 | N | 3 Mar 2015 | 4 - 5 | SW8260B | VOC | Trichlorofluoromethane | 1.9 UJ | 1.9 | 4.6 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S001 | N | 3 Mar 2015 | 4 - 5 | SW8260B | VOC | Trichloromethane (Chloroform) | 0.93 UJ | 0.93 | 4.6 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S001 | N | 3 Mar 2015 | 4 - 5 | SW8260B | VOC | Vinyl chloride | 1.9 UJ | 1.9 | 4.6 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S002 | N | 3 Mar 2015 | 7 - 8 | SW9045D | GENCHEM | pH | 8.46 = | | | | pH units | | NC |
| SO | BVBS1297 | BVBS1297S002 | N | 3 Mar 2015 | 7 - 8 | SW8015B | HC | Diesel Range Organics (C12-C14) | 5400 U | 2700 | 5400 | 5000 | µg/kg | X | N |
| SO | BVBS1297 | BVBS1297S002 | N | 3 Mar 2015 | 7 - 8 | SW8015B | HC | Diesel Range Organics (C15-C20) | 5400 U | 2700 | 5400 | 5000 | µg/kg | X | N |
| SO | BVBS1297 | BVBS1297S002 | N | 3 Mar 2015 | 7 - 8 | SW8015B | HC | Diesel Range Organics (C21-C30) | 5400 U | 2700 | 5400 | 5000 | µg/kg | X | N |
| SO | BVBS1297 | BVBS1297S002 | N | 3 Mar 2015 | 7 - 8 | SW8015B | HC | Diesel Range Organics (C8-C11) | 5400 U | 2700 | 5400 | 1000 | µg/kg | X | RL |
| SO | BVBS1297 | BVBS1297S002 | N | 3 Mar 2015 | 7 - 8 | SW8015B | HC | GRO (C4-C12) | 660 J | 470 | 930 | 1000 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S002 | N | 3 Mar 2015 | 7 - 8 | SW8015B | HC | ORO (C31-C40) | 11000 U | 5400 | 11000 | 10000 | µg/kg | X | N |
| SO | BVBS1297 | BVBS1297S002 | N | 3 Mar 2015 | 7 - 8 | SW8015B | HC | TOTAL EFH(C8-C40) | 3100 J | 2700 | 5400 | 10000 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S002 | N | 3 Mar 2015 | 7 - 8 | SW8270C-SIM | PAH | 1-Methylnaphthalene | 11 U | 5.4 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1297 | BVBS1297S002 | N | 3 Mar 2015 | 7 - 8 | SW8270C-SIM | PAH | 2-Methylnaphthalene | 11 U | 5.4 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1297 | BVBS1297S002 | N | 3 Mar 2015 | 7 - 8 | SW8270C-SIM | PAH | Acenaphthene | 11 U | 5.4 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1297 | BVBS1297S002 | N | 3 Mar 2015 | 7 - 8 | SW8270C-SIM | PAH | Acenaphthylene | 11 U | 5.4 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1297 | BVBS1297S002 | N | 3 Mar 2015 | 7 - 8 | SW8270C-SIM | PAH | Anthracene | 11 U | 5.4 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1297 | BVBS1297S002 | N | 3 Mar 2015 | 7 - 8 | SW8270C-SIM | PAH | Benzo(a)anthracene | 11 U | 5.4 | 11 | | µg/kg | | NC |
| SO | BVBS1297 | BVBS1297S002 | N | 3 Mar 2015 | 7 - 8 | SW8270C-SIM | PAH | Benzo(a)pyrene | 11 U | 5.4 | 11 | | µg/kg | | NC |
| SO | BVBS1297 | BVBS1297S002 | N | 3 Mar 2015 | 7 - 8 | SW8270C-SIM | PAH | Benzo(b)fluoranthene | 11 U | 5.4 | 11 | | µg/kg | | NC |
| SO | BVBS1297 | BVBS1297S002 | N | 3 Mar 2015 | 7 - 8 | SW8270C-SIM | PAH | Benzo(ghi)perylene | 11 U | 5.4 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1297 | BVBS1297S002 | N | 3 Mar 2015 | 7 - 8 | SW8270C-SIM | PAH | Benzo(k)fluoranthene | 11 U | 5.4 | 11 | | µg/kg | | NC |
| SO | BVBS1297 | BVBS1297S002 | N | 3 Mar 2015 | 7 - 8 | SW8270C-SIM | PAH | Chrysene | 11 U | 5.4 | 11 | | µg/kg | | NC |
| SO | BVBS1297 | BVBS1297S002 | N | 3 Mar 2015 | 7 - 8 | SW8270C-SIM | PAH | Dibenzo(a,h)anthracene | 11 U | 5.4 | 11 | | µg/kg | | NC |
| SO | BVBS1297 | BVBS1297S002 | N | 3 Mar 2015 | 7 - 8 | SW8270C-SIM | PAH | Fluoranthene | 11 U | 5.4 | 11 | 5.2 | µg/kg | X | RL |
| SO | BVBS1297 | BVBS1297S002 | N | 3 Mar 2015 | 7 - 8 | SW8270C-SIM | PAH | Fluorene | 11 U | 5.4 | 11 | 3.8 | µg/kg | X | RL |
| SO | BVBS1297 | BVBS1297S002 | N | 3 Mar 2015 | 7 - 8 | SW8270C-SIM | PAH | Indeno(1,2,3-cd)pyrene | 11 U | 5.4 | 11 | | µg/kg | | NC |
| SO | BVBS1297 | BVBS1297S002 | N | 3 Mar 2015 | 7 - 8 | SW8270C-SIM | PAH | Naphthalene | 11 U | 5.4 | 11 | 3.6 | µg/kg | X | RL |
| SO | BVBS1297 | BVBS1297S002 | N | 3 Mar 2015 | 7 - 8 | SW8270C-SIM | PAH | PAHTEQM | 0 U | | | 4.47 | µg/kg | | N |

APPENDIX E-2

**Analytical Data 2015 Biovent Sampling**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | SL | Units | Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1297 | BVBS1297S002 | N | 3 Mar 2015 | 7 - 8 | SW8270C-SIM | PAH | Phenanthrene | 11 U | 5.4 | 11 | 3.9 | µg/kg | X | RL |
| SO | BVBS1297 | BVBS1297S002 | N | 3 Mar 2015 | 7 - 8 | SW8270C-SIM | PAH | Pyrene | 11 U | 5.4 | 11 | 5.6 | µg/kg | X | N |
| SO | BVBS1297 | BVBS1297S002 | N | 3 Mar 2015 | 7 - 8 | SW8270C-SIM | PHTH | Bis(2-ethylhexyl)phthalate | 21 U | 11 | 21 | 61 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S002 | N | 3 Mar 2015 | 7 - 8 | SW8270C-SIM | PHTH | Butyl benzyl phthalate | 21 U | 11 | 21 | 100 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S002 | N | 3 Mar 2015 | 7 - 8 | SW8270C-SIM | PHTH | Diethyl phthalate | 21 U | 11 | 21 | 27 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S002 | N | 3 Mar 2015 | 7 - 8 | SW8270C-SIM | PHTH | Dimethyl phthalate | 21 U | 11 | 21 | 27 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S002 | N | 3 Mar 2015 | 7 - 8 | SW8270C-SIM | PHTH | Di-n-butyl phthalate | 21 U | 11 | 21 | 27 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S002 | N | 3 Mar 2015 | 7 - 8 | SW8270C-SIM | PHTH | Di-n-octyl phthalate | 21 U | 11 | 21 | 27 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | SVOC | Diisopropyl ether | 0.93 U | 0.93 | 9.3 | 10 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S002 | N | 3 Mar 2015 | 7 - 8 | SW8270C-SIM | SVOC | n-Nitrosodimethylamine | 21 U | 11 | 21 | 10 | µg/kg | X | RL |
| SO | BVBS1297 | BVBS1297S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | SVOC | tert-Amyl methyl ether | 0.93 U | 0.93 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | SVOC | tert-Butyl ethyl ether | 0.93 U | 0.93 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | 1,1,1,2-Tetrachloroethane | 0.93 U | 0.93 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | 1,1,1-Trichloroethane | 0.93 U | 0.93 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | 1,1,2,2-Tetrachloroethane | 0.93 U | 0.93 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | 1,1,2-Trichloro-1,2,2-trifluoroethane | 1.9 U | 1.9 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | 1,1,2-Trichloroethane | 0.93 U | 0.93 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | 1,1-Dichloroethane | 0.93 U | 0.93 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | 1,1-Dichloroethene | 0.93 U | 0.93 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | 1,1-Dichloropropene | 0.93 U | 0.93 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | 1,2,3-Trichlorobenzene | 1.9 U | 1.9 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | 1,2,3-Trichloropropane | 1.9 U | 1.9 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | 1,2,4-Trichlorobenzene | 1.9 U | 1.9 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | 1,2,4-Trimethylbenzene | 0.93 U | 0.93 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | 1,2-Dibromo-3-chloropropane | 1.9 U | 1.9 | 9.3 | 10 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | 1,2-Dibromoethane (EDB) | 0.93 U | 0.93 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | 1,2-Dichlorobenzene | 0.93 U | 0.93 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | 1,2-Dichloroethane | 0.93 U | 0.93 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | 1,2-Dichloropropane | 0.93 U | 0.93 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | 1,3,5-Trimethylbenzene | 0.93 U | 0.93 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | 1,3-Dichlorobenzene | 0.93 U | 0.93 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | 1,3-Dichloropropane | 0.93 U | 0.93 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | 1,4-Dichlorobenzene | 0.93 U | 0.93 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | 2,2-Dichloropropane | 1.9 U | 1.9 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | 2-Butanone (MEK) | 4.7 U | 4.7 | 19 | 20 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | 2-Chloro-1,1,1-trifluoroethane | 1.9 U | 1.9 | 9.3 | 10 | µg/kg | | N |

APPENDIX E-2

**Analytical Data 2015 Biovent Sampling**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | SL | Units | Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1297 | BVBS1297S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | 2-Chloroethyl vinyl ether | 1.9 U | 1.9 | 9.3 | 10 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | 2-Chlorotoluene | 0.93 U | 0.93 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | 2-Hexanone | 4.7 U | 4.7 | 9.3 | 10 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | 4-Chlorotoluene | 0.93 U | 0.93 | 9.3 | 10 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | 4-Methyl-2-pentanone (MIBK) | 4.7 U | 4.7 | 9.3 | 10 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | Acetone | 5 J | 4.7 | 19 | 20 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | Benzene | 0.93 U | 0.93 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | Bromobenzene | 0.93 U | 0.93 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | Bromochloromethane | 0.93 U | 0.93 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | Bromodichloromethane | 0.93 U | 0.93 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | Bromoform | 1.9 U | 1.9 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | Bromomethane | 1.9 U | 1.9 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | Carbon tetrachloride | 0.93 U | 0.93 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | Chlorobenzene | 0.93 U | 0.93 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | Chloroethane | 1.9 U | 1.9 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | Chloromethane | 1.9 U | 1.9 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | Chlorotrifluoroethylene | 1.9 U | 1.9 | 9.3 | 10 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | cis-1,2-Dichloroethene | 0.93 U | 0.93 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | cis-1,3-Dichloropropene | 0.93 U | 0.93 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | Dibromochloromethane | 0.93 U | 0.93 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | Dibromomethane | 0.93 U | 0.93 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | Dichlorodifluoromethane | 1.9 U | 1.9 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | Ethylbenzene | 0.93 U | 0.93 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | Hexachlorobutadiene | 1.9 U | 1.9 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | Isopropylbenzene | 0.93 U | 0.93 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | m,p-Xylenes | 1.9 U | 1.9 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | Methylene chloride | 1.9 U | 1.9 | 9.3 | 10 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | Methyl-tert-butyl Ether (MTBE) | 0.93 U | 0.93 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | n-butylbenzene | 0.93 U | 0.93 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | n-Propylbenzene | 0.93 U | 0.93 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | o-Xylene | 0.93 U | 0.93 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | p-Isopropyltoluene | 0.93 U | 0.93 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | sec-Butylbenzene | 0.93 U | 0.93 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | Styrene | 0.93 U | 0.93 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | tert-Butanol (TBA) | 9.3 U | 9.3 | 47 | | µg/kg | | NC |
| SO | BVBS1297 | BVBS1297S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | tert-Butylbenzene | 0.93 U | 0.93 | 4.7 | 5 | µg/kg | | N |

APPENDIX E-2

**Analytical Data 2015 Biovent Sampling**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | SL | Units | Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1297 | BVBS1297S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | Tetrachloroethene | 0.93 U | 0.93 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | Toluene | 0.93 U | 0.93 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | trans-1,2-Dichloroethene | 0.93 U | 0.93 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | trans-1,3-Dichloropropene | 0.93 U | 0.93 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | Trichloroethene | 0.93 U | 0.93 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | Trichlorofluoromethane | 1.9 U | 1.9 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | Trichloromethane (Chloroform) | 0.93 U | 0.93 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | Vinyl chloride | 1.9 U | 1.9 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S003 | N | 10 Apr 2015 | 4 - 5 | SW9045D | GENCHEM | pH | 7.09 = | | | | pH units | | NC |
| SO | BVBS1297 | BVBS1297S003 | N | 10 Apr 2015 | 4 - 5 | M8015D | HC | Diesel Range Organics (C12-C14) | 2500000 = | 29000 | 59000 | 5000 | µg/kg | X | Y |
| SO | BVBS1297 | BVBS1297S003 | N | 10 Apr 2015 | 4 - 5 | M8015D | HC | Diesel Range Organics (C15-C20) | 2100000 = | 29000 | 59000 | 5000 | µg/kg | X | Y |
| SO | BVBS1297 | BVBS1297S003 | N | 10 Apr 2015 | 4 - 5 | M8015D | HC | Diesel Range Organics (C21-C30) | 47000 J | 29000 | 59000 | 5000 | µg/kg | X | Y |
| SO | BVBS1297 | BVBS1297S003 | N | 10 Apr 2015 | 4 - 5 | M8015D | HC | Diesel Range Organics (C8-C11) | 440000 = | 29000 | 59000 | 1000 | µg/kg | X | Y |
| SO | BVBS1297 | BVBS1297S003 | N | 10 Apr 2015 | 4 - 5 | SW8015B | HC | GRO (C4-C12) | 1100000 = | 11000 | 22000 | 1000 | µg/kg | X | Y |
| SO | BVBS1297 | BVBS1297S003 | N | 10 Apr 2015 | 4 - 5 | M8015D | HC | ORO (C31-C40) | 120000 U | 59000 | 1E+05 | 10000 | µg/kg | X | RL |
| SO | BVBS1297 | BVBS1297S003 | N | 10 Apr 2015 | 4 - 5 | M8015D | HC | TOTAL EFH(C8-C40) | 5100000 = | 29000 | 59000 | 10000 | µg/kg | X | Y |
| SO | BVBS1297 | BVBS1297S003 | N | 10 Apr 2015 | 4 - 5 | SW8270C-SIM | PAH | 1-Methylnaphthalene | 12 UJ | 5.9 | 12 | 2.5 | µg/kg | X | RL |
| SO | BVBS1297 | BVBS1297S003 | N | 10 Apr 2015 | 4 - 5 | SW8270C-SIM | PAH | 2-Methylnaphthalene | 12 UJ | 5.9 | 12 | 2.5 | µg/kg | X | RL |
| SO | BVBS1297 | BVBS1297S003 | N | 10 Apr 2015 | 4 - 5 | SW8270C-SIM | PAH | Acenaphthene | 88 J | 5.9 | 12 | 2.5 | µg/kg | X | Y |
| SO | BVBS1297 | BVBS1297S003 | N | 10 Apr 2015 | 4 - 5 | SW8270C-SIM | PAH | Acenaphthylene | 12 UJ | 5.9 | 12 | 2.5 | µg/kg | X | RL |
| SO | BVBS1297 | BVBS1297S003 | N | 10 Apr 2015 | 4 - 5 | SW8270C-SIM | PAH | Anthracene | 60 J | 5.9 | 12 | 2.5 | µg/kg | X | Y |
| SO | BVBS1297 | BVBS1297S003 | N | 10 Apr 2015 | 4 - 5 | SW8270C-SIM | PAH | Benzo(a)anthracene | 44 J | 5.9 | 12 | | µg/kg | | NC |
| SO | BVBS1297 | BVBS1297S003 | N | 10 Apr 2015 | 4 - 5 | SW8270C-SIM | PAH | Benzo(a)pyrene | 49 J | 5.9 | 12 | | µg/kg | | NC |
| SO | BVBS1297 | BVBS1297S003 | N | 10 Apr 2015 | 4 - 5 | SW8270C-SIM | PAH | Benzo(b)fluoranthene | 59 J | 5.9 | 12 | | µg/kg | | NC |
| SO | BVBS1297 | BVBS1297S003 | N | 10 Apr 2015 | 4 - 5 | SW8270C-SIM | PAH | Benzo(ghi)perylene | 78 J | 5.9 | 12 | 2.5 | µg/kg | X | Y |
| SO | BVBS1297 | BVBS1297S003 | N | 10 Apr 2015 | 4 - 5 | SW8270C-SIM | PAH | Benzo(k)fluoranthene | 17 J | 5.9 | 12 | | µg/kg | | NC |
| SO | BVBS1297 | BVBS1297S003 | N | 10 Apr 2015 | 4 - 5 | SW8270C-SIM | PAH | Chrysene | 34 J | 5.9 | 12 | | µg/kg | | NC |
| SO | BVBS1297 | BVBS1297S003 | N | 10 Apr 2015 | 4 - 5 | SW8270C-SIM | PAH | Dibenzo(a,h)anthracene | 12 UJ | 5.9 | 12 | | µg/kg | | NC |
| SO | BVBS1297 | BVBS1297S003 | N | 10 Apr 2015 | 4 - 5 | SW8270C-SIM | PAH | Fluoranthene | 240 J | 5.9 | 12 | 5.2 | µg/kg | X | Y |
| SO | BVBS1297 | BVBS1297S003 | N | 10 Apr 2015 | 4 - 5 | SW8270C-SIM | PAH | Fluorene | 120 J | 5.9 | 12 | 3.8 | µg/kg | X | Y |
| SO | BVBS1297 | BVBS1297S003 | N | 10 Apr 2015 | 4 - 5 | SW8270C-SIM | PAH | Indeno(1,2,3-cd)pyrene | 39 J | 5.9 | 12 | | µg/kg | | NC |
| SO | BVBS1297 | BVBS1297S003 | N | 10 Apr 2015 | 4 - 5 | SW8270C-SIM | PAH | Naphthalene | 12 UJ | 5.9 | 12 | 3.6 | µg/kg | X | RL |
| SO | BVBS1297 | BVBS1297S003 | N | 10 Apr 2015 | 4 - 5 | SW8270C-SIM | PAH | PAHTEQM | 65.24 = | | | 4.47 | µg/kg | X | Y |
| SO | BVBS1297 | BVBS1297S003 | N | 10 Apr 2015 | 4 - 5 | SW8270C-SIM | PAH | Phenanthrene | 320 J | 5.9 | 12 | 3.9 | µg/kg | X | Y |
| SO | BVBS1297 | BVBS1297S003 | N | 10 Apr 2015 | 4 - 5 | SW8270C-SIM | PAH | Pyrene | 310 J | 5.9 | 12 | 5.6 | µg/kg | X | Y |
| SO | BVBS1297 | BVBS1297S003 | N | 10 Apr 2015 | 4 - 5 | SW8270C-SIM | PHTH | Bis(2-ethylhexyl)phthalate | 1200 J | 12 | 23 | 61 | µg/kg | X | Y |

APPENDIX E-2

**Analytical Data 2015 Biovent Sampling**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | SL | Units | Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1297 | BVBS1297S003 | N | 10 Apr 2015 | 4 - 5 | SW8270C-SIM | PHTH | Butyl benzyl phthalate | 23 UJ | 12 | 23 | 100 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S003 | N | 10 Apr 2015 | 4 - 5 | SW8270C-SIM | PHTH | Diethyl phthalate | 23 UJ | 12 | 23 | 27 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S003 | N | 10 Apr 2015 | 4 - 5 | SW8270C-SIM | PHTH | Dimethyl phthalate | 23 UJ | 12 | 23 | 27 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S003 | N | 10 Apr 2015 | 4 - 5 | SW8270C-SIM | PHTH | Di-n-butyl phthalate | 23 UJ | 12 | 23 | 27 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S003 | N | 10 Apr 2015 | 4 - 5 | SW8270C-SIM | PHTH | Di-n-octyl phthalate | 44 J | 12 | 23 | 27 | µg/kg | X | Y |
| SO | BVBS1297 | BVBS1297S003 | N | 10 Apr 2015 | 4 - 5 | SW8260B | SVOC | Diisopropyl ether | 1 UJ | 1 | 10 | 10 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S003 | N | 10 Apr 2015 | 4 - 5 | SW8270C-SIM | SVOC | n-Nitrosodimethylamine | 23 UJ | 12 | 23 | 10 | µg/kg | X | RL |
| SO | BVBS1297 | BVBS1297S003 | N | 10 Apr 2015 | 4 - 5 | SW8260B | SVOC | tert-Amyl methyl ether | 1 UJ | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S003 | N | 10 Apr 2015 | 4 - 5 | SW8260B | SVOC | tert-Butyl ethyl ether | 1 UJ | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S003 | N | 10 Apr 2015 | 4 - 5 | SW8260B | VOC | 1,1,1,2-Tetrachloroethane | 1 UJ | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S003 | N | 10 Apr 2015 | 4 - 5 | SW8260B | VOC | 1,1,1-Trichloroethane | 1.2 J | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S003 | N | 10 Apr 2015 | 4 - 5 | SW8260B | VOC | 1,1,2,2-Tetrachloroethane | 1 UJ | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S003 | N | 10 Apr 2015 | 4 - 5 | SW8260B | VOC | 1,1,2-Trichloro-1,2,2-trifluoroethane | 2.1 UJ | 2.1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S003 | N | 10 Apr 2015 | 4 - 5 | SW8260B | VOC | 1,1,2-Trichloroethane | 1 UJ | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S003 | N | 10 Apr 2015 | 4 - 5 | SW8260B | VOC | 1,1-Dichloroethane | 1 UJ | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S003 | N | 10 Apr 2015 | 4 - 5 | SW8260B | VOC | 1,1-Dichloroethene | 1 UJ | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S003 | N | 10 Apr 2015 | 4 - 5 | SW8260B | VOC | 1,1-Dichloropropene | 1 UJ | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S003 | N | 10 Apr 2015 | 4 - 5 | SW8260B | VOC | 1,2,3-Trichlorobenzene | 2.1 UJ | 2.1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S003 | N | 10 Apr 2015 | 4 - 5 | SW8260B | VOC | 1,2,3-Trichloropropane | 2.1 UJ | 2.1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S003 | N | 10 Apr 2015 | 4 - 5 | SW8260B | VOC | 1,2,4-Trichlorobenzene | 2.1 UJ | 2.1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S003 | N | 10 Apr 2015 | 4 - 5 | SW8260B | VOC | 1,2,4-Trimethylbenzene | 3.1 J | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S003 | N | 10 Apr 2015 | 4 - 5 | SW8260B | VOC | 1,2-Dibromo-3-chloropropane | 2.1 UJ | 2.1 | 10 | 10 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S003 | N | 10 Apr 2015 | 4 - 5 | SW8260B | VOC | 1,2-Dibromoethane (EDB) | 1 UJ | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S003 | N | 10 Apr 2015 | 4 - 5 | SW8260B | VOC | 1,2-Dichlorobenzene | 1 UJ | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S003 | N | 10 Apr 2015 | 4 - 5 | SW8260B | VOC | 1,2-Dichloroethane | 1 UJ | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S003 | N | 10 Apr 2015 | 4 - 5 | SW8260B | VOC | 1,2-Dichloropropane | 1 UJ | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S003 | N | 10 Apr 2015 | 4 - 5 | SW8260B | VOC | 1,3,5-Trimethylbenzene | 1 UJ | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S003 | N | 10 Apr 2015 | 4 - 5 | SW8260B | VOC | 1,3-Dichlorobenzene | 1 UJ | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S003 | N | 10 Apr 2015 | 4 - 5 | SW8260B | VOC | 1,3-Dichloropropane | 1 UJ | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S003 | N | 10 Apr 2015 | 4 - 5 | SW8260B | VOC | 1,4-Dichlorobenzene | 1 UJ | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S003 | N | 10 Apr 2015 | 4 - 5 | SW8260B | VOC | 2,2-Dichloropropane | 2.1 UJ | 2.1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S003 | N | 10 Apr 2015 | 4 - 5 | SW8260B | VOC | 2-Butanone (MEK) | 8.1 U | 5.2 | 21 | 20 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S003 | N | 10 Apr 2015 | 4 - 5 | SW8260B | VOC | 2-Chloro-1,1,1-trifluoroethane | 2.1 UJ | 2.1 | 10 | 10 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S003 | N | 10 Apr 2015 | 4 - 5 | SW8260B | VOC | 2-Chloroethyl vinyl ether | 2.1 UJ | 2.1 | 10 | 10 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S003 | N | 10 Apr 2015 | 4 - 5 | SW8260B | VOC | 2-Chlorotoluene | 1 UJ | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S003 | N | 10 Apr 2015 | 4 - 5 | SW8260B | VOC | 2-Hexanone | 5.2 UJ | 5.2 | 10 | 10 | µg/kg | | N |

APPENDIX E-2

**Analytical Data 2015 Biovent Sampling**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | SL | Units | Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1297 | BVBS1297S003 | N | 10 Apr 2015 | 4 - 5 | SW8260B | VOC | 4-Chlorotoluene | 1 UJ | 1 | 10 | 10 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S003 | N | 10 Apr 2015 | 4 - 5 | SW8260B | VOC | 4-Methyl-2-pentanone (MIBK) | 5.2 UJ | 5.2 | 10 | 10 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S003 | N | 10 Apr 2015 | 4 - 5 | SW8260B | VOC | Acetone | 59 J | 5.2 | 21 | 20 | µg/kg | X | Y |
| SO | BVBS1297 | BVBS1297S003 | N | 10 Apr 2015 | 4 - 5 | SW8260B | VOC | Benzene | 1 UJ | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S003 | N | 10 Apr 2015 | 4 - 5 | SW8260B | VOC | Bromobenzene | 1 UJ | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S003 | N | 10 Apr 2015 | 4 - 5 | SW8260B | VOC | Bromochloromethane | 1 UJ | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S003 | N | 10 Apr 2015 | 4 - 5 | SW8260B | VOC | Bromodichloromethane | 1 UJ | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S003 | N | 10 Apr 2015 | 4 - 5 | SW8260B | VOC | Bromoform | 2.1 UJ | 2.1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S003 | N | 10 Apr 2015 | 4 - 5 | SW8260B | VOC | Bromomethane | 2.1 UJ | 2.1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S003 | N | 10 Apr 2015 | 4 - 5 | SW8260B | VOC | Carbon tetrachloride | 1 UJ | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S003 | N | 10 Apr 2015 | 4 - 5 | SW8260B | VOC | Chlorobenzene | 1 UJ | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S003 | N | 10 Apr 2015 | 4 - 5 | SW8260B | VOC | Chloroethane | 2.1 UJ | 2.1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S003 | N | 10 Apr 2015 | 4 - 5 | SW8260B | VOC | Chloromethane | 2.1 UJ | 2.1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S003 | N | 10 Apr 2015 | 4 - 5 | SW8260B | VOC | Chlorotrifluoroethylene | 2.1 UJ | 2.1 | 10 | 10 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S003 | N | 10 Apr 2015 | 4 - 5 | SW8260B | VOC | cis-1,2-Dichloroethene | 1 UJ | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S003 | N | 10 Apr 2015 | 4 - 5 | SW8260B | VOC | cis-1,3-Dichloropropene | 1 UJ | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S003 | N | 10 Apr 2015 | 4 - 5 | SW8260B | VOC | Dibromochloromethane | 1 UJ | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S003 | N | 10 Apr 2015 | 4 - 5 | SW8260B | VOC | Dibromomethane | 1 UJ | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S003 | N | 10 Apr 2015 | 4 - 5 | SW8260B | VOC | Dichlorodifluoromethane | 2.1 UJ | 2.1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S003 | N | 10 Apr 2015 | 4 - 5 | SW8260B | VOC | Ethylbenzene | 1 UJ | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S003 | N | 10 Apr 2015 | 4 - 5 | SW8260B | VOC | Hexachlorobutadiene | 2.1 UJ | 2.1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S003 | N | 10 Apr 2015 | 4 - 5 | SW8260B | VOC | Isopropylbenzene | 1 UJ | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S003 | N | 10 Apr 2015 | 4 - 5 | SW8260B | VOC | m,p-Xylenes | 2.1 UJ | 2.1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S003 | N | 10 Apr 2015 | 4 - 5 | SW8260B | VOC | Methylene chloride | 2.1 UJ | 2.1 | 10 | 10 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S003 | N | 10 Apr 2015 | 4 - 5 | SW8260B | VOC | Methyl-tert-butyl Ether (MTBE) | 1 UJ | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S003 | N | 10 Apr 2015 | 4 - 5 | SW8260B | VOC | n-butylbenzene | 1 UJ | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S003 | N | 10 Apr 2015 | 4 - 5 | SW8260B | VOC | n-Propylbenzene | 1 UJ | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S003 | N | 10 Apr 2015 | 4 - 5 | SW8260B | VOC | o-Xylene | 1 UJ | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S003 | N | 10 Apr 2015 | 4 - 5 | SW8260B | VOC | p-Isopropyltoluene | 1 UJ | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S003 | N | 10 Apr 2015 | 4 - 5 | SW8260B | VOC | sec-Butylbenzene | 1.9 J | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S003 | N | 10 Apr 2015 | 4 - 5 | SW8260B | VOC | Styrene | 1 UJ | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S003 | N | 10 Apr 2015 | 4 - 5 | SW8260B | VOC | tert-Butanol (TBA) | 10 UJ | 10 | 52 | | µg/kg | | NC |
| SO | BVBS1297 | BVBS1297S003 | N | 10 Apr 2015 | 4 - 5 | SW8260B | VOC | tert-Butylbenzene | 1 UJ | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S003 | N | 10 Apr 2015 | 4 - 5 | SW8260B | VOC | Tetrachloroethene | 1 UJ | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S003 | N | 10 Apr 2015 | 4 - 5 | SW8260B | VOC | Toluene | 1 UJ | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S003 | N | 10 Apr 2015 | 4 - 5 | SW8260B | VOC | trans-1,2-Dichloroethene | 1 UJ | 1 | 5.2 | 5 | µg/kg | | N |

APPENDIX E-2

**Analytical Data 2015 Biovent Sampling**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | SL | Units | Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1297 | BVBS1297S003 | N | 10 Apr 2015 | 4 - 5 | SW8260B | VOC | trans-1,3-Dichloropropene | 1 UJ | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S003 | N | 10 Apr 2015 | 4 - 5 | SW8260B | VOC | Trichloroethene | 1 UJ | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S003 | N | 10 Apr 2015 | 4 - 5 | SW8260B | VOC | Trichlorofluoromethane | 2.1 UJ | 2.1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S003 | N | 10 Apr 2015 | 4 - 5 | SW8260B | VOC | Trichloromethane (Chloroform) | 1 UJ | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S003 | N | 10 Apr 2015 | 4 - 5 | SW8260B | VOC | Vinyl chloride | 2.1 UJ | 2.1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S004 | N | 10 Apr 2015 | 7 - 8 | SW9045D | GENCHEM | pH | 8.11 = | | | | pH units | | NC |
| SO | BVBS1297 | BVBS1297S004 | N | 10 Apr 2015 | 7 - 8 | M8015D | HC | Diesel Range Organics (C12-C14) | 5300 U | 2600 | 5300 | 5000 | µg/kg | X | N |
| SO | BVBS1297 | BVBS1297S004 | N | 10 Apr 2015 | 7 - 8 | M8015D | HC | Diesel Range Organics (C15-C20) | 5300 U | 2600 | 5300 | 5000 | µg/kg | X | N |
| SO | BVBS1297 | BVBS1297S004 | N | 10 Apr 2015 | 7 - 8 | M8015D | HC | Diesel Range Organics (C21-C30) | 5300 U | 2600 | 5300 | 5000 | µg/kg | X | N |
| SO | BVBS1297 | BVBS1297S004 | N | 10 Apr 2015 | 7 - 8 | M8015D | HC | Diesel Range Organics (C8-C11) | 5300 U | 2600 | 5300 | 1000 | µg/kg | X | RL |
| SO | BVBS1297 | BVBS1297S004 | N | 10 Apr 2015 | 7 - 8 | SW8015B | HC | GRO (C4-C12) | 950 U | 480 | 950 | 1000 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S004 | N | 10 Apr 2015 | 7 - 8 | M8015D | HC | ORO (C31-C40) | 11000 U | 5300 | 11000 | 10000 | µg/kg | X | N |
| SO | BVBS1297 | BVBS1297S004 | N | 10 Apr 2015 | 7 - 8 | M8015D | HC | TOTAL EFH(C8-C40) | 5300 U | 2600 | 5300 | 10000 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S004 | N | 10 Apr 2015 | 7 - 8 | SW8270C-SIM | PAH | 1-Methylnaphthalene | 11 U | 5.3 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1297 | BVBS1297S004 | N | 10 Apr 2015 | 7 - 8 | SW8270C-SIM | PAH | 2-Methylnaphthalene | 11 U | 5.3 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1297 | BVBS1297S004 | N | 10 Apr 2015 | 7 - 8 | SW8270C-SIM | PAH | Acenaphthene | 11 U | 5.3 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1297 | BVBS1297S004 | N | 10 Apr 2015 | 7 - 8 | SW8270C-SIM | PAH | Acenaphthylene | 11 U | 5.3 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1297 | BVBS1297S004 | N | 10 Apr 2015 | 7 - 8 | SW8270C-SIM | PAH | Anthracene | 11 U | 5.3 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1297 | BVBS1297S004 | N | 10 Apr 2015 | 7 - 8 | SW8270C-SIM | PAH | Benzo(a)anthracene | 11 U | 5.3 | 11 | | µg/kg | | NC |
| SO | BVBS1297 | BVBS1297S004 | N | 10 Apr 2015 | 7 - 8 | SW8270C-SIM | PAH | Benzo(a)pyrene | 11 U | 5.3 | 11 | | µg/kg | | NC |
| SO | BVBS1297 | BVBS1297S004 | N | 10 Apr 2015 | 7 - 8 | SW8270C-SIM | PAH | Benzo(b)fluoranthene | 11 U | 5.3 | 11 | | µg/kg | | NC |
| SO | BVBS1297 | BVBS1297S004 | N | 10 Apr 2015 | 7 - 8 | SW8270C-SIM | PAH | Benzo(ghi)perylene | 11 U | 5.3 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1297 | BVBS1297S004 | N | 10 Apr 2015 | 7 - 8 | SW8270C-SIM | PAH | Benzo(k)fluoranthene | 11 U | 5.3 | 11 | | µg/kg | | NC |
| SO | BVBS1297 | BVBS1297S004 | N | 10 Apr 2015 | 7 - 8 | SW8270C-SIM | PAH | Chrysene | 11 U | 5.3 | 11 | | µg/kg | | NC |
| SO | BVBS1297 | BVBS1297S004 | N | 10 Apr 2015 | 7 - 8 | SW8270C-SIM | PAH | Dibenzo(a,h)anthracene | 11 U | 5.3 | 11 | | µg/kg | | NC |
| SO | BVBS1297 | BVBS1297S004 | N | 10 Apr 2015 | 7 - 8 | SW8270C-SIM | PAH | Fluoranthene | 11 U | 5.3 | 11 | 5.2 | µg/kg | X | RL |
| SO | BVBS1297 | BVBS1297S004 | N | 10 Apr 2015 | 7 - 8 | SW8270C-SIM | PAH | Fluorene | 11 U | 5.3 | 11 | 3.8 | µg/kg | X | RL |
| SO | BVBS1297 | BVBS1297S004 | N | 10 Apr 2015 | 7 - 8 | SW8270C-SIM | PAH | Indeno(1,2,3-cd)pyrene | 11 U | 5.3 | 11 | | µg/kg | | NC |
| SO | BVBS1297 | BVBS1297S004 | N | 10 Apr 2015 | 7 - 8 | SW8270C-SIM | PAH | Naphthalene | 11 U | 5.3 | 11 | 3.6 | µg/kg | X | RL |
| SO | BVBS1297 | BVBS1297S004 | N | 10 Apr 2015 | 7 - 8 | SW8270C-SIM | PAH | PAHTEQM | 0 U | | | 4.47 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S004 | N | 10 Apr 2015 | 7 - 8 | SW8270C-SIM | PAH | Phenanthrene | 11 U | 5.3 | 11 | 3.9 | µg/kg | X | RL |
| SO | BVBS1297 | BVBS1297S004 | N | 10 Apr 2015 | 7 - 8 | SW8270C-SIM | PAH | Pyrene | 11 U | 5.3 | 11 | 5.6 | µg/kg | X | N |
| SO | BVBS1297 | BVBS1297S004 | N | 10 Apr 2015 | 7 - 8 | SW8270C-SIM | PHTH | Bis(2-ethylhexyl)phthalate | 21 U | 11 | 21 | 61 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S004 | N | 10 Apr 2015 | 7 - 8 | SW8270C-SIM | PHTH | Butyl benzyl phthalate | 21 U | 11 | 21 | 100 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S004 | N | 10 Apr 2015 | 7 - 8 | SW8270C-SIM | PHTH | Diethyl phthalate | 21 U | 11 | 21 | 27 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S004 | N | 10 Apr 2015 | 7 - 8 | SW8270C-SIM | PHTH | Dimethyl phthalate | 21 U | 11 | 21 | 27 | µg/kg | | N |

APPENDIX E-2

**Analytical Data 2015 Biovent Sampling**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | SL | Units | Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1297 | BVBS1297S004 | N | 10 Apr 2015 | 7 - 8 | SW8270C-SIM | PHTH | Di-n-butyl phthalate | 21 U | 11 | 21 | 27 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S004 | N | 10 Apr 2015 | 7 - 8 | SW8270C-SIM | PHTH | Di-n-octyl phthalate | 21 U | 11 | 21 | 27 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S004 | N | 10 Apr 2015 | 7 - 8 | SW8260B | SVOC | Diisopropyl ether | 0.93 U | 0.93 | 9.3 | 10 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S004 | N | 10 Apr 2015 | 7 - 8 | SW8270C-SIM | SVOC | n-Nitrosodimethylamine | 21 U | 11 | 21 | 10 | µg/kg | X | RL |
| SO | BVBS1297 | BVBS1297S004 | N | 10 Apr 2015 | 7 - 8 | SW8260B | SVOC | tert-Amyl methyl ether | 0.93 U | 0.93 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S004 | N | 10 Apr 2015 | 7 - 8 | SW8260B | SVOC | tert-Butyl ethyl ether | 0.93 U | 0.93 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S004 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | 1,1,1,2-Tetrachloroethane | 0.93 U | 0.93 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S004 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | 1,1,1-Trichloroethane | 0.93 U | 0.93 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S004 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | 1,1,2,2-Tetrachloroethane | 0.93 U | 0.93 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S004 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | 1,1,2-Trichloro-1,2,2-trifluoroethane | 1.9 U | 1.9 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S004 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | 1,1,2-Trichloroethane | 0.93 U | 0.93 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S004 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | 1,1-Dichloroethane | 0.93 U | 0.93 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S004 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | 1,1-Dichloroethene | 0.93 U | 0.93 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S004 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | 1,1-Dichloropropene | 0.93 U | 0.93 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S004 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | 1,2,3-Trichlorobenzene | 1.9 U | 1.9 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S004 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | 1,2,3-Trichloropropane | 1.9 U | 1.9 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S004 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | 1,2,4-Trichlorobenzene | 1.9 U | 1.9 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S004 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | 1,2,4-Trimethylbenzene | 0.93 U | 0.93 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S004 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | 1,2-Dibromo-3-chloropropane | 1.9 U | 1.9 | 9.3 | 10 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S004 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | 1,2-Dibromoethane (EDB) | 0.93 U | 0.93 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S004 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | 1,2-Dichlorobenzene | 0.93 U | 0.93 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S004 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | 1,2-Dichloroethane | 0.93 U | 0.93 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S004 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | 1,2-Dichloropropane | 0.93 U | 0.93 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S004 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | 1,3,5-Trimethylbenzene | 0.93 U | 0.93 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S004 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | 1,3-Dichlorobenzene | 0.93 U | 0.93 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S004 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | 1,3-Dichloropropane | 0.93 U | 0.93 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S004 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | 1,4-Dichlorobenzene | 0.93 U | 0.93 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S004 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | 2,2-Dichloropropane | 1.9 U | 1.9 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S004 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | 2-Butanone (MEK) | 4.7 U | 4.7 | 19 | 20 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S004 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | 2-Chloro-1,1,1-trifluoroethane | 1.9 U | 1.9 | 9.3 | 10 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S004 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | 2-Chloroethyl vinyl ether | 1.9 U | 1.9 | 9.3 | 10 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S004 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | 2-Chlorotoluene | 0.93 U | 0.93 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S004 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | 2-Hexanone | 4.7 U | 4.7 | 9.3 | 10 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S004 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | 4-Chlorotoluene | 0.93 U | 0.93 | 9.3 | 10 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S004 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | 4-Methyl-2-pentanone (MIBK) | 4.7 U | 4.7 | 9.3 | 10 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S004 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | Acetone | 8.7 J | 4.7 | 19 | 20 | µg/kg | | N |

APPENDIX E-2

**Analytical Data 2015 Biovent Sampling**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | SL | Units | Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1297 | BVBS1297S004 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | Benzene | 0.93 U | 0.93 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S004 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | Bromobenzene | 0.93 U | 0.93 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S004 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | Bromochloromethane | 0.93 U | 0.93 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S004 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | Bromodichloromethane | 0.93 U | 0.93 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S004 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | Bromoform | 1.9 U | 1.9 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S004 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | Bromomethane | 1.9 U | 1.9 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S004 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | Carbon tetrachloride | 0.93 U | 0.93 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S004 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | Chlorobenzene | 0.93 U | 0.93 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S004 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | Chloroethane | 1.9 U | 1.9 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S004 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | Chloromethane | 1.9 U | 1.9 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S004 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | Chlorotrifluoroethylene | 1.9 U | 1.9 | 9.3 | 10 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S004 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | cis-1,2-Dichloroethene | 0.93 U | 0.93 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S004 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | cis-1,3-Dichloropropene | 0.93 U | 0.93 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S004 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | Dibromochloromethane | 0.93 U | 0.93 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S004 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | Dibromomethane | 0.93 U | 0.93 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S004 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | Dichlorodifluoromethane | 1.9 U | 1.9 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S004 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | Ethylbenzene | 0.93 U | 0.93 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S004 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | Hexachlorobutadiene | 1.9 U | 1.9 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S004 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | Isopropylbenzene | 0.93 U | 0.93 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S004 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | m,p-Xylenes | 1.9 U | 1.9 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S004 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | Methylene chloride | 1.9 U | 1.9 | 9.3 | 10 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S004 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | Methyl-tert-butyl Ether (MTBE) | 0.93 U | 0.93 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S004 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | n-butylbenzene | 0.93 U | 0.93 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S004 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | n-Propylbenzene | 0.93 U | 0.93 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S004 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | o-Xylene | 0.93 U | 0.93 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S004 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | p-Isopropyltoluene | 0.93 U | 0.93 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S004 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | sec-Butylbenzene | 0.93 U | 0.93 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S004 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | Styrene | 0.93 U | 0.93 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S004 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | tert-Butanol (TBA) | 9.3 U | 9.3 | 47 | | µg/kg | | NC |
| SO | BVBS1297 | BVBS1297S004 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | tert-Butylbenzene | 0.93 U | 0.93 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S004 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | Tetrachloroethene | 0.93 U | 0.93 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S004 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | Toluene | 0.93 U | 0.93 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S004 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | trans-1,2-Dichloroethene | 0.93 U | 0.93 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S004 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | trans-1,3-Dichloropropene | 0.93 U | 0.93 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S004 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | Trichloroethene | 0.93 U | 0.93 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S004 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | Trichlorofluoromethane | 1.9 U | 1.9 | 4.7 | 5 | µg/kg | | N |

APPENDIX E-2

**Analytical Data 2015 Biovent Sampling**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | SL | Units | Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1297 | BVBS1297S004 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | Trichloromethane (Chloroform) | 0.93 U | 0.93 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S004 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | Vinyl chloride | 1.9 U | 1.9 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S001 | N | 3 Mar 2015 | 4 - 5 | SW9045D | GENCHEM | pH | 7.97 = | | | | pH units | | NC |
| SO | BVBS1298 | BVBS1298S001 | N | 3 Mar 2015 | 4 - 5 | SW8015B | HC | Diesel Range Organics (C12-C14) | 9800000 = | 61000 | 1E+05 | 5000 | µg/kg | X | Y |
| SO | BVBS1298 | BVBS1298S001 | N | 3 Mar 2015 | 4 - 5 | SW8015B | HC | Diesel Range Organics (C15-C20) | 5100000 = | 61000 | 1E+05 | 5000 | µg/kg | X | Y |
| SO | BVBS1298 | BVBS1298S001 | N | 3 Mar 2015 | 4 - 5 | SW8015B | HC | Diesel Range Organics (C21-C30) | 90000 J | 61000 | 1E+05 | 5000 | µg/kg | X | Y |
| SO | BVBS1298 | BVBS1298S001 | N | 3 Mar 2015 | 4 - 5 | SW8015B | HC | Diesel Range Organics (C8-C11) | 3300000 = | 61000 | 1E+05 | 1000 | µg/kg | X | Y |
| SO | BVBS1298 | BVBS1298S001 | N | 3 Mar 2015 | 4 - 5 | SW8015B | HC | GRO (C4-C12) | 2000000 = | 51000 | 1E+05 | 1000 | µg/kg | X | Y |
| SO | BVBS1298 | BVBS1298S001 | N | 3 Mar 2015 | 4 - 5 | SW8015B | HC | ORO (C31-C40) | 240000 U | 1E+05 | 2E+05 | 10000 | µg/kg | X | RL |
| SO | BVBS1298 | BVBS1298S001 | N | 3 Mar 2015 | 4 - 5 | SW8015B | HC | TOTAL EFH(C8-C40) | 18000000 = | 61000 | 1E+05 | 10000 | µg/kg | X | Y |
| SO | BVBS1298 | BVBS1298S001 | N | 3 Mar 2015 | 4 - 5 | SW8270C-SIM | PAH | 1-Methylnaphthalene | 24 U | 12 | 24 | 2.5 | µg/kg | X | RL |
| SO | BVBS1298 | BVBS1298S001 | N | 3 Mar 2015 | 4 - 5 | SW8270C-SIM | PAH | 2-Methylnaphthalene | 24 U | 12 | 24 | 2.5 | µg/kg | X | RL |
| SO | BVBS1298 | BVBS1298S001 | N | 3 Mar 2015 | 4 - 5 | SW8270C-SIM | PAH | Acenaphthene | 200 J | 12 | 24 | 2.5 | µg/kg | X | Y |
| SO | BVBS1298 | BVBS1298S001 | N | 3 Mar 2015 | 4 - 5 | SW8270C-SIM | PAH | Acenaphthylene | 24 U | 12 | 24 | 2.5 | µg/kg | X | RL |
| SO | BVBS1298 | BVBS1298S001 | N | 3 Mar 2015 | 4 - 5 | SW8270C-SIM | PAH | Anthracene | 100 J | 12 | 24 | 2.5 | µg/kg | X | Y |
| SO | BVBS1298 | BVBS1298S001 | N | 3 Mar 2015 | 4 - 5 | SW8270C-SIM | PAH | Benzo(a)anthracene | 95 J | 12 | 24 | | µg/kg | | NC |
| SO | BVBS1298 | BVBS1298S001 | N | 3 Mar 2015 | 4 - 5 | SW8270C-SIM | PAH | Benzo(a)pyrene | 98 J | 12 | 24 | | µg/kg | | NC |
| SO | BVBS1298 | BVBS1298S001 | N | 3 Mar 2015 | 4 - 5 | SW8270C-SIM | PAH | Benzo(b)fluoranthene | 110 J | 12 | 24 | | µg/kg | | NC |
| SO | BVBS1298 | BVBS1298S001 | N | 3 Mar 2015 | 4 - 5 | SW8270C-SIM | PAH | Benzo(ghi)perylene | 160 J | 12 | 24 | 2.5 | µg/kg | X | Y |
| SO | BVBS1298 | BVBS1298S001 | N | 3 Mar 2015 | 4 - 5 | SW8270C-SIM | PAH | Benzo(k)fluoranthene | 26 J | 12 | 24 | | µg/kg | | NC |
| SO | BVBS1298 | BVBS1298S001 | N | 3 Mar 2015 | 4 - 5 | SW8270C-SIM | PAH | Chrysene | 77 J | 12 | 24 | | µg/kg | | NC |
| SO | BVBS1298 | BVBS1298S001 | N | 3 Mar 2015 | 4 - 5 | SW8270C-SIM | PAH | Dibenzo(a,h)anthracene | 24 U | 12 | 24 | | µg/kg | | NC |
| SO | BVBS1298 | BVBS1298S001 | N | 3 Mar 2015 | 4 - 5 | SW8270C-SIM | PAH | Fluoranthene | 490 J | 12 | 24 | 5.2 | µg/kg | X | Y |
| SO | BVBS1298 | BVBS1298S001 | N | 3 Mar 2015 | 4 - 5 | SW8270C-SIM | PAH | Fluorene | 170 J | 12 | 24 | 3.8 | µg/kg | X | Y |
| SO | BVBS1298 | BVBS1298S001 | N | 3 Mar 2015 | 4 - 5 | SW8270C-SIM | PAH | Indeno(1,2,3-cd)pyrene | 78 J | 12 | 24 | | µg/kg | | NC |
| SO | BVBS1298 | BVBS1298S001 | N | 3 Mar 2015 | 4 - 5 | SW8270C-SIM | PAH | Naphthalene | 24 U | 12 | 24 | 3.6 | µg/kg | X | RL |
| SO | BVBS1298 | BVBS1298S001 | N | 3 Mar 2015 | 4 - 5 | SW8270C-SIM | PAH | PAHTEQM | 129.67 = | | | 4.47 | µg/kg | X | Y |
| SO | BVBS1298 | BVBS1298S001 | N | 3 Mar 2015 | 4 - 5 | SW8270C-SIM | PAH | Phenanthrene | 300 J | 12 | 24 | 3.9 | µg/kg | X | Y |
| SO | BVBS1298 | BVBS1298S001 | N | 3 Mar 2015 | 4 - 5 | SW8270C-SIM | PAH | Pyrene | 640 J | 12 | 24 | 5.6 | µg/kg | X | Y |
| SO | BVBS1298 | BVBS1298S001 | N | 3 Mar 2015 | 4 - 5 | SW8270C-SIM | PHTH | Bis(2-ethylhexyl)phthalate | 2900 J | 24 | 49 | 61 | µg/kg | X | Y |
| SO | BVBS1298 | BVBS1298S001 | N | 3 Mar 2015 | 4 - 5 | SW8270C-SIM | PHTH | Butyl benzyl phthalate | 49 U | 24 | 49 | 100 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S001 | N | 3 Mar 2015 | 4 - 5 | SW8270C-SIM | PHTH | Diethyl phthalate | 49 U | 24 | 49 | 27 | µg/kg | X | N |
| SO | BVBS1298 | BVBS1298S001 | N | 3 Mar 2015 | 4 - 5 | SW8270C-SIM | PHTH | Dimethyl phthalate | 49 U | 24 | 49 | 27 | µg/kg | X | N |
| SO | BVBS1298 | BVBS1298S001 | N | 3 Mar 2015 | 4 - 5 | SW8270C-SIM | PHTH | Di-n-butyl phthalate | 49 U | 24 | 49 | 27 | µg/kg | X | N |
| SO | BVBS1298 | BVBS1298S001 | N | 3 Mar 2015 | 4 - 5 | SW8270C-SIM | PHTH | Di-n-octyl phthalate | 67 J | 24 | 49 | 27 | µg/kg | X | Y |
| SO | BVBS1298 | BVBS1298S001 | N | 3 Mar 2015 | 4 - 5 | SW8260B | SVOC | Diisopropyl ether | 0.98 UJ | 0.98 | 9.8 | 10 | µg/kg | | N |

APPENDIX E-2

**Analytical Data 2015 Biovent Sampling**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | SL | Units | Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1298 | BVBS1298S001 | N | 3 Mar 2015 | 4 - 5 | SW8270C-SIM | SVOC | n-Nitrosodimethylamine | 49 U | 24 | 49 | 10 | µg/kg | X | RL |
| SO | BVBS1298 | BVBS1298S001 | N | 3 Mar 2015 | 4 - 5 | SW8260B | SVOC | tert-Amyl methyl ether | 0.98 UJ | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S001 | N | 3 Mar 2015 | 4 - 5 | SW8260B | SVOC | tert-Butyl ethyl ether | 0.98 UJ | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S001 | N | 3 Mar 2015 | 4 - 5 | SW8260B | VOC | 1,1,1,2-Tetrachloroethane | 0.98 UJ | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S001 | N | 3 Mar 2015 | 4 - 5 | SW8260B | VOC | 1,1,1-Trichloroethane | 0.98 UJ | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S001 | N | 3 Mar 2015 | 4 - 5 | SW8260B | VOC | 1,1,2,2-Tetrachloroethane | 0.98 UJ | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S001 | N | 3 Mar 2015 | 4 - 5 | SW8260B | VOC | 1,1,2-Trichloro-1,2,2-trifluoroethane | 2 UJ | 2 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S001 | N | 3 Mar 2015 | 4 - 5 | SW8260B | VOC | 1,1,2-Trichloroethane | 0.98 UJ | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S001 | N | 3 Mar 2015 | 4 - 5 | SW8260B | VOC | 1,1-Dichloroethane | 0.98 UJ | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S001 | N | 3 Mar 2015 | 4 - 5 | SW8260B | VOC | 1,1-Dichloroethene | 0.98 UJ | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S001 | N | 3 Mar 2015 | 4 - 5 | SW8260B | VOC | 1,1-Dichloropropene | 0.98 UJ | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S001 | N | 3 Mar 2015 | 4 - 5 | SW8260B | VOC | 1,2,3-Trichlorobenzene | 2 UJ | 2 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S001 | N | 3 Mar 2015 | 4 - 5 | SW8260B | VOC | 1,2,3-Trichloropropane | 2 UJ | 2 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S001 | N | 3 Mar 2015 | 4 - 5 | SW8260B | VOC | 1,2,4-Trichlorobenzene | 2 UJ | 2 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S001 | N | 3 Mar 2015 | 4 - 5 | SW8260B | VOC | 1,2,4-Trimethylbenzene | 7.4 J | 0.98 | 4.9 | 5 | µg/kg | X | Y |
| SO | BVBS1298 | BVBS1298S001 | N | 3 Mar 2015 | 4 - 5 | SW8260B | VOC | 1,2-Dibromo-3-chloropropane | 2 UJ | 2 | 9.8 | 10 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S001 | N | 3 Mar 2015 | 4 - 5 | SW8260B | VOC | 1,2-Dibromoethane (EDB) | 0.98 UJ | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S001 | N | 3 Mar 2015 | 4 - 5 | SW8260B | VOC | 1,2-Dichlorobenzene | 0.98 UJ | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S001 | N | 3 Mar 2015 | 4 - 5 | SW8260B | VOC | 1,2-Dichloroethane | 0.98 UJ | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S001 | N | 3 Mar 2015 | 4 - 5 | SW8260B | VOC | 1,2-Dichloropropane | 0.98 UJ | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S001 | N | 3 Mar 2015 | 4 - 5 | SW8260B | VOC | 1,3,5-Trimethylbenzene | 3.2 J | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S001 | N | 3 Mar 2015 | 4 - 5 | SW8260B | VOC | 1,3-Dichlorobenzene | 0.98 UJ | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S001 | N | 3 Mar 2015 | 4 - 5 | SW8260B | VOC | 1,3-Dichloropropane | 0.98 UJ | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S001 | N | 3 Mar 2015 | 4 - 5 | SW8260B | VOC | 1,4-Dichlorobenzene | 0.98 UJ | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S001 | N | 3 Mar 2015 | 4 - 5 | SW8260B | VOC | 2,2-Dichloropropane | 2 UJ | 2 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S001 | N | 3 Mar 2015 | 4 - 5 | SW8260B | VOC | 2-Butanone (MEK) | 4.9 UJ | 4.9 | 20 | 20 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S001 | N | 3 Mar 2015 | 4 - 5 | SW8260B | VOC | 2-Chloro-1,1,1-trifluoroethane | 2 UJ | 2 | 9.8 | 10 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S001 | N | 3 Mar 2015 | 4 - 5 | SW8260B | VOC | 2-Chloroethyl vinyl ether | 2 UJ | 2 | 9.8 | 10 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S001 | N | 3 Mar 2015 | 4 - 5 | SW8260B | VOC | 2-Chlorotoluene | 0.98 UJ | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S001 | N | 3 Mar 2015 | 4 - 5 | SW8260B | VOC | 2-Hexanone | 4.9 UJ | 4.9 | 9.8 | 10 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S001 | N | 3 Mar 2015 | 4 - 5 | SW8260B | VOC | 4-Chlorotoluene | 0.98 UJ | 0.98 | 9.8 | 10 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S001 | N | 3 Mar 2015 | 4 - 5 | SW8260B | VOC | 4-Methyl-2-pentanone (MIBK) | 4.9 UJ | 4.9 | 9.8 | 10 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S001 | N | 3 Mar 2015 | 4 - 5 | SW8260B | VOC | Acetone | 7.5 J | 4.9 | 20 | 20 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S001 | N | 3 Mar 2015 | 4 - 5 | SW8260B | VOC | Benzene | 0.98 UJ | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S001 | N | 3 Mar 2015 | 4 - 5 | SW8260B | VOC | Bromobenzene | 0.98 UJ | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S001 | N | 3 Mar 2015 | 4 - 5 | SW8260B | VOC | Bromochloromethane | 0.98 UJ | 0.98 | 4.9 | 5 | µg/kg | | N |

APPENDIX E-2

**Analytical Data 2015 Biovent Sampling**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | SL | Units | Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1298 | BVBS1298S001 | N | 3 Mar 2015 | 4 - 5 | SW8260B | VOC | Bromodichloromethane | 0.98 UJ | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S001 | N | 3 Mar 2015 | 4 - 5 | SW8260B | VOC | Bromoform | 2 UJ | 2 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S001 | N | 3 Mar 2015 | 4 - 5 | SW8260B | VOC | Bromomethane | 2 UJ | 2 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S001 | N | 3 Mar 2015 | 4 - 5 | SW8260B | VOC | Carbon tetrachloride | 0.98 UJ | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S001 | N | 3 Mar 2015 | 4 - 5 | SW8260B | VOC | Chlorobenzene | 0.98 UJ | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S001 | N | 3 Mar 2015 | 4 - 5 | SW8260B | VOC | Chloroethane | 2 UJ | 2 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S001 | N | 3 Mar 2015 | 4 - 5 | SW8260B | VOC | Chloromethane | 2 UJ | 2 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S001 | N | 3 Mar 2015 | 4 - 5 | SW8260B | VOC | Chlorotrifluoroethylene | 2 UJ | 2 | 9.8 | 10 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S001 | N | 3 Mar 2015 | 4 - 5 | SW8260B | VOC | cis-1,2-Dichloroethene | 0.98 UJ | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S001 | N | 3 Mar 2015 | 4 - 5 | SW8260B | VOC | cis-1,3-Dichloropropene | 0.98 UJ | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S001 | N | 3 Mar 2015 | 4 - 5 | SW8260B | VOC | Dibromochloromethane | 0.98 UJ | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S001 | N | 3 Mar 2015 | 4 - 5 | SW8260B | VOC | Dibromomethane | 0.98 UJ | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S001 | N | 3 Mar 2015 | 4 - 5 | SW8260B | VOC | Dichlorodifluoromethane | 2 UJ | 2 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S001 | N | 3 Mar 2015 | 4 - 5 | SW8260B | VOC | Ethylbenzene | 19 J | 0.98 | 4.9 | 5 | µg/kg | X | Y |
| SO | BVBS1298 | BVBS1298S001 | N | 3 Mar 2015 | 4 - 5 | SW8260B | VOC | Hexachlorobutadiene | 2 UJ | 2 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S001 | N | 3 Mar 2015 | 4 - 5 | SW8260B | VOC | Isopropylbenzene | 20 J | 0.98 | 4.9 | 5 | µg/kg | X | Y |
| SO | BVBS1298 | BVBS1298S001 | N | 3 Mar 2015 | 4 - 5 | SW8260B | VOC | m,p-Xylenes | 3.6 J | 2 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S001 | N | 3 Mar 2015 | 4 - 5 | SW8260B | VOC | Methylene chloride | 2 UJ | 2 | 9.8 | 10 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S001 | N | 3 Mar 2015 | 4 - 5 | SW8260B | VOC | Methyl-tert-butyl Ether (MTBE) | 0.98 UJ | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S001 | N | 3 Mar 2015 | 4 - 5 | SW8260B | VOC | n-butylbenzene | 0.98 UJ | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S001 | N | 3 Mar 2015 | 4 - 5 | SW8260B | VOC | n-Propylbenzene | 34 J | 0.98 | 4.9 | 5 | µg/kg | X | Y |
| SO | BVBS1298 | BVBS1298S001 | N | 3 Mar 2015 | 4 - 5 | SW8260B | VOC | o-Xylene | 7.2 J | 0.98 | 4.9 | 5 | µg/kg | X | Y |
| SO | BVBS1298 | BVBS1298S001 | N | 3 Mar 2015 | 4 - 5 | SW8260B | VOC | p-Isopropyltoluene | 4.2 J | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S001 | N | 3 Mar 2015 | 4 - 5 | SW8260B | VOC | sec-Butylbenzene | 35 J | 0.98 | 4.9 | 5 | µg/kg | X | Y |
| SO | BVBS1298 | BVBS1298S001 | N | 3 Mar 2015 | 4 - 5 | SW8260B | VOC | Styrene | 0.98 UJ | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S001 | N | 3 Mar 2015 | 4 - 5 | SW8260B | VOC | tert-Butanol (TBA) | 9.8 UJ | 9.8 | 49 | | µg/kg | | NC |
| SO | BVBS1298 | BVBS1298S001 | N | 3 Mar 2015 | 4 - 5 | SW8260B | VOC | tert-Butylbenzene | 3 J | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S001 | N | 3 Mar 2015 | 4 - 5 | SW8260B | VOC | Tetrachloroethene | 0.98 UJ | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S001 | N | 3 Mar 2015 | 4 - 5 | SW8260B | VOC | Toluene | 2.9 J | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S001 | N | 3 Mar 2015 | 4 - 5 | SW8260B | VOC | trans-1,2-Dichloroethene | 0.98 UJ | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S001 | N | 3 Mar 2015 | 4 - 5 | SW8260B | VOC | trans-1,3-Dichloropropene | 0.98 UJ | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S001 | N | 3 Mar 2015 | 4 - 5 | SW8260B | VOC | Trichloroethene | 0.98 UJ | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S001 | N | 3 Mar 2015 | 4 - 5 | SW8260B | VOC | Trichlorofluoromethane | 2 UJ | 2 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S001 | N | 3 Mar 2015 | 4 - 5 | SW8260B | VOC | Trichloromethane (Chloroform) | 0.98 UJ | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S001 | N | 3 Mar 2015 | 4 - 5 | SW8260B | VOC | Vinyl chloride | 2 UJ | 2 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S002 | N | 3 Mar 2015 | 7 - 8 | SW9045D | GENCHEM | pH | 7.92 = | | | | pH units | | NC |

APPENDIX E-2

**Analytical Data 2015 Biovent Sampling**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | SL | Units | Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1298 | BVBS1298S002 | N | 3 Mar 2015 | 7 - 8 | SW8015B | HC | Diesel Range Organics (C12-C14) | 28000 = | 2800 | 5600 | 5000 | µg/kg | X | Y |
| SO | BVBS1298 | BVBS1298S002 | N | 3 Mar 2015 | 7 - 8 | SW8015B | HC | Diesel Range Organics (C15-C20) | 39000 = | 2800 | 5600 | 5000 | µg/kg | X | Y |
| SO | BVBS1298 | BVBS1298S002 | N | 3 Mar 2015 | 7 - 8 | SW8015B | HC | Diesel Range Organics (C21-C30) | 2900 J | 2800 | 5600 | 5000 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S002 | N | 3 Mar 2015 | 7 - 8 | SW8015B | HC | Diesel Range Organics (C8-C11) | 6600 = | 2800 | 5600 | 1000 | µg/kg | X | Y |
| SO | BVBS1298 | BVBS1298S002 | N | 3 Mar 2015 | 7 - 8 | SW8015B | HC | GRO (C4-C12) | 12000 = | 430 | 870 | 1000 | µg/kg | X | Y |
| SO | BVBS1298 | BVBS1298S002 | N | 3 Mar 2015 | 7 - 8 | SW8015B | HC | ORO (C31-C40) | 7600 J | 5600 | 11000 | 10000 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S002 | N | 3 Mar 2015 | 7 - 8 | SW8015B | HC | TOTAL EFH(C8-C40) | 84000 = | 2800 | 5600 | 10000 | µg/kg | X | Y |
| SO | BVBS1298 | BVBS1298S002 | N | 3 Mar 2015 | 7 - 8 | SW8270C-SIM | PAH | 1-Methylnaphthalene | 11 U | 5.6 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1298 | BVBS1298S002 | N | 3 Mar 2015 | 7 - 8 | SW8270C-SIM | PAH | 2-Methylnaphthalene | 11 U | 5.6 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1298 | BVBS1298S002 | N | 3 Mar 2015 | 7 - 8 | SW8270C-SIM | PAH | Acenaphthene | 11 U | 5.6 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1298 | BVBS1298S002 | N | 3 Mar 2015 | 7 - 8 | SW8270C-SIM | PAH | Acenaphthylene | 11 U | 5.6 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1298 | BVBS1298S002 | N | 3 Mar 2015 | 7 - 8 | SW8270C-SIM | PAH | Anthracene | 11 U | 5.6 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1298 | BVBS1298S002 | N | 3 Mar 2015 | 7 - 8 | SW8270C-SIM | PAH | Benzo(a)anthracene | 11 U | 5.6 | 11 | | µg/kg | | NC |
| SO | BVBS1298 | BVBS1298S002 | N | 3 Mar 2015 | 7 - 8 | SW8270C-SIM | PAH | Benzo(a)pyrene | 11 U | 5.6 | 11 | | µg/kg | | NC |
| SO | BVBS1298 | BVBS1298S002 | N | 3 Mar 2015 | 7 - 8 | SW8270C-SIM | PAH | Benzo(b)fluoranthene | 11 U | 5.6 | 11 | | µg/kg | | NC |
| SO | BVBS1298 | BVBS1298S002 | N | 3 Mar 2015 | 7 - 8 | SW8270C-SIM | PAH | Benzo(ghi)perylene | 11 U | 5.6 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1298 | BVBS1298S002 | N | 3 Mar 2015 | 7 - 8 | SW8270C-SIM | PAH | Benzo(k)fluoranthene | 11 U | 5.6 | 11 | | µg/kg | | NC |
| SO | BVBS1298 | BVBS1298S002 | N | 3 Mar 2015 | 7 - 8 | SW8270C-SIM | PAH | Chrysene | 11 U | 5.6 | 11 | | µg/kg | | NC |
| SO | BVBS1298 | BVBS1298S002 | N | 3 Mar 2015 | 7 - 8 | SW8270C-SIM | PAH | Dibenzo(a,h)anthracene | 11 U | 5.6 | 11 | | µg/kg | | NC |
| SO | BVBS1298 | BVBS1298S002 | N | 3 Mar 2015 | 7 - 8 | SW8270C-SIM | PAH | Fluoranthene | 6.5 J | 5.6 | 11 | 5.2 | µg/kg | X | Y |
| SO | BVBS1298 | BVBS1298S002 | N | 3 Mar 2015 | 7 - 8 | SW8270C-SIM | PAH | Fluorene | 11 U | 5.6 | 11 | 3.8 | µg/kg | X | RL |
| SO | BVBS1298 | BVBS1298S002 | N | 3 Mar 2015 | 7 - 8 | SW8270C-SIM | PAH | Indeno(1,2,3-cd)pyrene | 11 U | 5.6 | 11 | | µg/kg | | NC |
| SO | BVBS1298 | BVBS1298S002 | N | 3 Mar 2015 | 7 - 8 | SW8270C-SIM | PAH | Naphthalene | 11 U | 5.6 | 11 | 3.6 | µg/kg | X | RL |
| SO | BVBS1298 | BVBS1298S002 | N | 3 Mar 2015 | 7 - 8 | SW8270C-SIM | PAH | PAHTEQM | 0 U | | | 4.47 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S002 | N | 3 Mar 2015 | 7 - 8 | SW8270C-SIM | PAH | Phenanthrene | 11 U | 5.6 | 11 | 3.9 | µg/kg | X | RL |
| SO | BVBS1298 | BVBS1298S002 | N | 3 Mar 2015 | 7 - 8 | SW8270C-SIM | PAH | Pyrene | 7.8 J | 5.6 | 11 | 5.6 | µg/kg | X | Y |
| SO | BVBS1298 | BVBS1298S002 | N | 3 Mar 2015 | 7 - 8 | SW8270C-SIM | PHTH | Bis(2-ethylhexyl)phthalate | 48 = | 11 | 22 | 61 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S002 | N | 3 Mar 2015 | 7 - 8 | SW8270C-SIM | PHTH | Butyl benzyl phthalate | 22 U | 11 | 22 | 100 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S002 | N | 3 Mar 2015 | 7 - 8 | SW8270C-SIM | PHTH | Diethyl phthalate | 22 U | 11 | 22 | 27 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S002 | N | 3 Mar 2015 | 7 - 8 | SW8270C-SIM | PHTH | Dimethyl phthalate | 22 U | 11 | 22 | 27 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S002 | N | 3 Mar 2015 | 7 - 8 | SW8270C-SIM | PHTH | Di-n-butyl phthalate | 22 U | 11 | 22 | 27 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S002 | N | 3 Mar 2015 | 7 - 8 | SW8270C-SIM | PHTH | Di-n-octyl phthalate | 22 U | 11 | 22 | 27 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | SVOC | Diisopropyl ether | 0.98 U | 0.98 | 9.8 | 10 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S002 | N | 3 Mar 2015 | 7 - 8 | SW8270C-SIM | SVOC | n-Nitrosodimethylamine | 22 U | 11 | 22 | 10 | µg/kg | X | RL |
| SO | BVBS1298 | BVBS1298S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | SVOC | tert-Amyl methyl ether | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | SVOC | tert-Butyl ethyl ether | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |

APPENDIX E-2

**Analytical Data 2015 Biovent Sampling**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | SL | Units | Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1298 | BVBS1298S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | 1,1,1,2-Tetrachloroethane | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | 1,1,1-Trichloroethane | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | 1,1,2,2-Tetrachloroethane | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | 1,1,2-Trichloro-1,2,2-trifluoroethane | 2 U | 2 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | 1,1,2-Trichloroethane | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | 1,1-Dichloroethane | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | 1,1-Dichloroethene | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | 1,1-Dichloropropene | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | 1,2,3-Trichlorobenzene | 2 U | 2 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | 1,2,3-Trichloropropane | 2 U | 2 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | 1,2,4-Trichlorobenzene | 2 U | 2 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | 1,2,4-Trimethylbenzene | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | 1,2-Dibromo-3-chloropropane | 2 U | 2 | 9.8 | 10 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | 1,2-Dibromoethane (EDB) | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | 1,2-Dichlorobenzene | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | 1,2-Dichloroethane | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | 1,2-Dichloropropane | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | 1,3,5-Trimethylbenzene | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | 1,3-Dichlorobenzene | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | 1,3-Dichloropropane | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | 1,4-Dichlorobenzene | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | 2,2-Dichloropropane | 2 U | 2 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | 2-Butanone (MEK) | 7.5 J | 4.9 | 20 | 20 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | 2-Chloro-1,1,1-trifluoroethane | 2 U | 2 | 9.8 | 10 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | 2-Chloroethyl vinyl ether | 2 U | 2 | 9.8 | 10 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | 2-Chlorotoluene | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | 2-Hexanone | 4.9 U | 4.9 | 9.8 | 10 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | 4-Chlorotoluene | 0.98 U | 0.98 | 9.8 | 10 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | 4-Methyl-2-pentanone (MIBK) | 4.9 U | 4.9 | 9.8 | 10 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | Acetone | 42 = | 4.9 | 20 | 20 | µg/kg | X | Y |
| SO | BVBS1298 | BVBS1298S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | Benzene | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | Bromobenzene | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | Bromochloromethane | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | Bromodichloromethane | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | Bromoform | 2 U | 2 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | Bromomethane | 2 U | 2 | 4.9 | 5 | µg/kg | | N |

APPENDIX E-2

**Analytical Data 2015 Biovent Sampling**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | SL | Units | Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1298 | BVBS1298S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | Carbon tetrachloride | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | Chlorobenzene | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | Chloroethane | 2 U | 2 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | Chloromethane | 2 U | 2 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | Chlorotrifluoroethylene | 2 U | 2 | 9.8 | 10 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | cis-1,2-Dichloroethene | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | cis-1,3-Dichloropropene | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | Dibromochloromethane | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | Dibromomethane | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | Dichlorodifluoromethane | 2 U | 2 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | Ethylbenzene | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | Hexachlorobutadiene | 2 U | 2 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | Isopropylbenzene | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | m,p-Xylenes | 2 U | 2 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | Methylene chloride | 2 U | 2 | 9.8 | 10 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | Methyl-tert-butyl Ether (MTBE) | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | n-butylbenzene | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | n-Propylbenzene | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | o-Xylene | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | p-Isopropyltoluene | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | sec-Butylbenzene | 1.1 J | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | Styrene | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | tert-Butanol (TBA) | 9.8 U | 9.8 | 49 | | µg/kg | | NC |
| SO | BVBS1298 | BVBS1298S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | tert-Butylbenzene | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | Tetrachloroethene | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | Toluene | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | trans-1,2-Dichloroethene | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | trans-1,3-Dichloropropene | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | Trichloroethene | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | Trichlorofluoromethane | 2 U | 2 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | Trichloromethane (Chloroform) | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | Vinyl chloride | 2 U | 2 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S003 | N | 10 Apr 2015 | 4 - 5 | SW9045D | GENCHEM | pH | 7.72 = | | | | pH units | | NC |
| SO | BVBS1298 | BVBS1298S003 | N | 10 Apr 2015 | 4 - 5 | M8015D | HC | Diesel Range Organics (C12-C14) | 5400000 = | 30000 | 60000 | 5000 | µg/kg | X | Y |
| SO | BVBS1298 | BVBS1298S003 | N | 10 Apr 2015 | 4 - 5 | M8015D | HC | Diesel Range Organics (C15-C20) | 3000000 = | 30000 | 60000 | 5000 | µg/kg | X | Y |
| SO | BVBS1298 | BVBS1298S003 | N | 10 Apr 2015 | 4 - 5 | M8015D | HC | Diesel Range Organics (C21-C30) | 110000 = | 30000 | 60000 | 5000 | µg/kg | X | Y |

APPENDIX E-2

**Analytical Data 2015 Biovent Sampling**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | SL | Units | Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1298 | BVBS1298S003 | N | 10 Apr 2015 | 4 - 5 | M8015D | HC | Diesel Range Organics (C8-C11) | 1200000 = | 30000 | 60000 | 1000 | µg/kg | X | Y |
| SO | BVBS1298 | BVBS1298S003 | N | 10 Apr 2015 | 4 - 5 | SW8015B | HC | GRO (C4-C12) | 1700000 = | 26000 | 53000 | 1000 | µg/kg | X | Y |
| SO | BVBS1298 | BVBS1298S003 | N | 10 Apr 2015 | 4 - 5 | M8015D | HC | ORO (C31-C40) | 120000 U | 60000 | 1E+05 | 10000 | µg/kg | X | RL |
| SO | BVBS1298 | BVBS1298S003 | N | 10 Apr 2015 | 4 - 5 | M8015D | HC | TOTAL EFH(C8-C40) | 9700000 = | 30000 | 60000 | 10000 | µg/kg | X | Y |
| SO | BVBS1298 | BVBS1298S003 | N | 10 Apr 2015 | 4 - 5 | SW8270C-SIM | PAH | 1-Methylnaphthalene | 12 UJ | 6 | 12 | 2.5 | µg/kg | X | RL |
| SO | BVBS1298 | BVBS1298S003 | N | 10 Apr 2015 | 4 - 5 | SW8270C-SIM | PAH | 2-Methylnaphthalene | 12 UJ | 6 | 12 | 2.5 | µg/kg | X | RL |
| SO | BVBS1298 | BVBS1298S003 | N | 10 Apr 2015 | 4 - 5 | SW8270C-SIM | PAH | Acenaphthene | 120 J | 6 | 12 | 2.5 | µg/kg | X | Y |
| SO | BVBS1298 | BVBS1298S003 | N | 10 Apr 2015 | 4 - 5 | SW8270C-SIM | PAH | Acenaphthylene | 12 UJ | 6 | 12 | 2.5 | µg/kg | X | RL |
| SO | BVBS1298 | BVBS1298S003 | N | 10 Apr 2015 | 4 - 5 | SW8270C-SIM | PAH | Anthracene | 77 J | 6 | 12 | 2.5 | µg/kg | X | Y |
| SO | BVBS1298 | BVBS1298S003 | N | 10 Apr 2015 | 4 - 5 | SW8270C-SIM | PAH | Benzo(a)anthracene | 44 J | 6 | 12 | | µg/kg | | NC |
| SO | BVBS1298 | BVBS1298S003 | N | 10 Apr 2015 | 4 - 5 | SW8270C-SIM | PAH | Benzo(a)pyrene | 61 J | 6 | 12 | | µg/kg | | NC |
| SO | BVBS1298 | BVBS1298S003 | N | 10 Apr 2015 | 4 - 5 | SW8270C-SIM | PAH | Benzo(b)fluoranthene | 69 J | 6 | 12 | | µg/kg | | NC |
| SO | BVBS1298 | BVBS1298S003 | N | 10 Apr 2015 | 4 - 5 | SW8270C-SIM | PAH | Benzo(ghi)perylene | 93 J | 6 | 12 | 2.5 | µg/kg | X | Y |
| SO | BVBS1298 | BVBS1298S003 | N | 10 Apr 2015 | 4 - 5 | SW8270C-SIM | PAH | Benzo(k)fluoranthene | 21 J | 6 | 12 | | µg/kg | | NC |
| SO | BVBS1298 | BVBS1298S003 | N | 10 Apr 2015 | 4 - 5 | SW8270C-SIM | PAH | Chrysene | 50 J | 6 | 12 | | µg/kg | | NC |
| SO | BVBS1298 | BVBS1298S003 | N | 10 Apr 2015 | 4 - 5 | SW8270C-SIM | PAH | Dibenzo(a,h)anthracene | 12 UJ | 6 | 12 | | µg/kg | | NC |
| SO | BVBS1298 | BVBS1298S003 | N | 10 Apr 2015 | 4 - 5 | SW8270C-SIM | PAH | Fluoranthene | 290 J | 6 | 12 | 5.2 | µg/kg | X | Y |
| SO | BVBS1298 | BVBS1298S003 | N | 10 Apr 2015 | 4 - 5 | SW8270C-SIM | PAH | Fluorene | 150 J | 6 | 12 | 3.8 | µg/kg | X | Y |
| SO | BVBS1298 | BVBS1298S003 | N | 10 Apr 2015 | 4 - 5 | SW8270C-SIM | PAH | Indeno(1,2,3-cd)pyrene | 47 J | 6 | 12 | | µg/kg | | NC |
| SO | BVBS1298 | BVBS1298S003 | N | 10 Apr 2015 | 4 - 5 | SW8270C-SIM | PAH | Naphthalene | 12 UJ | 6 | 12 | 3.6 | µg/kg | X | RL |
| SO | BVBS1298 | BVBS1298S003 | N | 10 Apr 2015 | 4 - 5 | SW8270C-SIM | PAH | PAHTEQM | 79.6 = | | | 4.47 | µg/kg | X | Y |
| SO | BVBS1298 | BVBS1298S003 | N | 10 Apr 2015 | 4 - 5 | SW8270C-SIM | PAH | Phenanthrene | 200 J | 6 | 12 | 3.9 | µg/kg | X | Y |
| SO | BVBS1298 | BVBS1298S003 | N | 10 Apr 2015 | 4 - 5 | SW8270C-SIM | PAH | Pyrene | 350 J | 6 | 12 | 5.6 | µg/kg | X | Y |
| SO | BVBS1298 | BVBS1298S003 | N | 10 Apr 2015 | 4 - 5 | SW8270C-SIM | PHTH | Bis(2-ethylhexyl)phthalate | 1300 J | 12 | 24 | 61 | µg/kg | X | Y |
| SO | BVBS1298 | BVBS1298S003 | N | 10 Apr 2015 | 4 - 5 | SW8270C-SIM | PHTH | Butyl benzyl phthalate | 24 UJ | 12 | 24 | 100 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S003 | N | 10 Apr 2015 | 4 - 5 | SW8270C-SIM | PHTH | Diethyl phthalate | 24 UJ | 12 | 24 | 27 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S003 | N | 10 Apr 2015 | 4 - 5 | SW8270C-SIM | PHTH | Dimethyl phthalate | 24 UJ | 12 | 24 | 27 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S003 | N | 10 Apr 2015 | 4 - 5 | SW8270C-SIM | PHTH | Di-n-butyl phthalate | 24 UJ | 12 | 24 | 27 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S003 | N | 10 Apr 2015 | 4 - 5 | SW8270C-SIM | PHTH | Di-n-octyl phthalate | 41 J | 12 | 24 | 27 | µg/kg | X | Y |
| SO | BVBS1298 | BVBS1298S003 | N | 10 Apr 2015 | 4 - 5 | SW8260B | SVOC | Diisopropyl ether | 0.96 UJ | 0.96 | 9.6 | 10 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S003 | N | 10 Apr 2015 | 4 - 5 | SW8270C-SIM | SVOC | n-Nitrosodimethylamine | 24 UJ | 12 | 24 | 10 | µg/kg | X | RL |
| SO | BVBS1298 | BVBS1298S003 | N | 10 Apr 2015 | 4 - 5 | SW8260B | SVOC | tert-Amyl methyl ether | 0.96 UJ | 0.96 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S003 | N | 10 Apr 2015 | 4 - 5 | SW8260B | SVOC | tert-Butyl ethyl ether | 0.96 UJ | 0.96 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S003 | N | 10 Apr 2015 | 4 - 5 | SW8260B | VOC | 1,1,1,2-Tetrachloroethane | 0.96 UJ | 0.96 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S003 | N | 10 Apr 2015 | 4 - 5 | SW8260B | VOC | 1,1,1-Trichloroethane | 0.96 UJ | 0.96 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S003 | N | 10 Apr 2015 | 4 - 5 | SW8260B | VOC | 1,1,2,2-Tetrachloroethane | 0.96 UJ | 0.96 | 4.8 | 5 | µg/kg | | N |

APPENDIX E-2

**Analytical Data 2015 Biovent Sampling**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | SL | Units | Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1298 | BVBS1298S003 | N | 10 Apr 2015 | 4 - 5 | SW8260B | VOC | 1,1,2-Trichloro-1,2,2-trifluoroethane | 1.9 UJ | 1.9 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S003 | N | 10 Apr 2015 | 4 - 5 | SW8260B | VOC | 1,1,2-Trichloroethane | 0.96 UJ | 0.96 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S003 | N | 10 Apr 2015 | 4 - 5 | SW8260B | VOC | 1,1-Dichloroethane | 0.96 UJ | 0.96 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S003 | N | 10 Apr 2015 | 4 - 5 | SW8260B | VOC | 1,1-Dichloroethene | 0.96 UJ | 0.96 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S003 | N | 10 Apr 2015 | 4 - 5 | SW8260B | VOC | 1,1-Dichloropropene | 0.96 UJ | 0.96 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S003 | N | 10 Apr 2015 | 4 - 5 | SW8260B | VOC | 1,2,3-Trichlorobenzene | 1.9 UJ | 1.9 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S003 | N | 10 Apr 2015 | 4 - 5 | SW8260B | VOC | 1,2,3-Trichloropropane | 1.9 UJ | 1.9 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S003 | N | 10 Apr 2015 | 4 - 5 | SW8260B | VOC | 1,2,4-Trichlorobenzene | 1.9 UJ | 1.9 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S003 | N | 10 Apr 2015 | 4 - 5 | SW8260B | VOC | 1,2,4-Trimethylbenzene | 2.6 J | 0.96 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S003 | N | 10 Apr 2015 | 4 - 5 | SW8260B | VOC | 1,2-Dibromo-3-chloropropane | 1.9 UJ | 1.9 | 9.6 | 10 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S003 | N | 10 Apr 2015 | 4 - 5 | SW8260B | VOC | 1,2-Dibromoethane (EDB) | 0.96 UJ | 0.96 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S003 | N | 10 Apr 2015 | 4 - 5 | SW8260B | VOC | 1,2-Dichlorobenzene | 0.96 UJ | 0.96 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S003 | N | 10 Apr 2015 | 4 - 5 | SW8260B | VOC | 1,2-Dichloroethane | 0.96 UJ | 0.96 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S003 | N | 10 Apr 2015 | 4 - 5 | SW8260B | VOC | 1,2-Dichloropropane | 0.96 UJ | 0.96 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S003 | N | 10 Apr 2015 | 4 - 5 | SW8260B | VOC | 1,3,5-Trimethylbenzene | 1.4 J | 0.96 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S003 | N | 10 Apr 2015 | 4 - 5 | SW8260B | VOC | 1,3-Dichlorobenzene | 0.96 UJ | 0.96 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S003 | N | 10 Apr 2015 | 4 - 5 | SW8260B | VOC | 1,3-Dichloropropane | 0.96 UJ | 0.96 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S003 | N | 10 Apr 2015 | 4 - 5 | SW8260B | VOC | 1,4-Dichlorobenzene | 0.96 UJ | 0.96 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S003 | N | 10 Apr 2015 | 4 - 5 | SW8260B | VOC | 2,2-Dichloropropane | 1.9 UJ | 1.9 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S003 | N | 10 Apr 2015 | 4 - 5 | SW8260B | VOC | 2-Butanone (MEK) | 5.6 U | 4.8 | 19 | 20 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S003 | N | 10 Apr 2015 | 4 - 5 | SW8260B | VOC | 2-Chloro-1,1,1-trifluoroethane | 1.9 UJ | 1.9 | 9.6 | 10 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S003 | N | 10 Apr 2015 | 4 - 5 | SW8260B | VOC | 2-Chloroethyl vinyl ether | 1.9 UJ | 1.9 | 9.6 | 10 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S003 | N | 10 Apr 2015 | 4 - 5 | SW8260B | VOC | 2-Chlorotoluene | 0.96 UJ | 0.96 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S003 | N | 10 Apr 2015 | 4 - 5 | SW8260B | VOC | 2-Hexanone | 4.8 UJ | 4.8 | 9.6 | 10 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S003 | N | 10 Apr 2015 | 4 - 5 | SW8260B | VOC | 4-Chlorotoluene | 0.96 UJ | 0.96 | 9.6 | 10 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S003 | N | 10 Apr 2015 | 4 - 5 | SW8260B | VOC | 4-Methyl-2-pentanone (MIBK) | 4.8 UJ | 4.8 | 9.6 | 10 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S003 | N | 10 Apr 2015 | 4 - 5 | SW8260B | VOC | Acetone | 23 J | 4.8 | 19 | 20 | µg/kg | X | Y |
| SO | BVBS1298 | BVBS1298S003 | N | 10 Apr 2015 | 4 - 5 | SW8260B | VOC | Benzene | 0.96 UJ | 0.96 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S003 | N | 10 Apr 2015 | 4 - 5 | SW8260B | VOC | Bromobenzene | 0.96 UJ | 0.96 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S003 | N | 10 Apr 2015 | 4 - 5 | SW8260B | VOC | Bromochloromethane | 0.96 UJ | 0.96 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S003 | N | 10 Apr 2015 | 4 - 5 | SW8260B | VOC | Bromodichloromethane | 0.96 UJ | 0.96 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S003 | N | 10 Apr 2015 | 4 - 5 | SW8260B | VOC | Bromoform | 1.9 UJ | 1.9 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S003 | N | 10 Apr 2015 | 4 - 5 | SW8260B | VOC | Bromomethane | 1.9 UJ | 1.9 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S003 | N | 10 Apr 2015 | 4 - 5 | SW8260B | VOC | Carbon tetrachloride | 0.96 UJ | 0.96 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S003 | N | 10 Apr 2015 | 4 - 5 | SW8260B | VOC | Chlorobenzene | 0.96 UJ | 0.96 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S003 | N | 10 Apr 2015 | 4 - 5 | SW8260B | VOC | Chloroethane | 1.9 UJ | 1.9 | 4.8 | 5 | µg/kg | | N |

APPENDIX E-2

**Analytical Data 2015 Biovent Sampling**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | SL | Units | Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1298 | BVBS1298S003 | N | 10 Apr 2015 | 4 - 5 | SW8260B | VOC | Chloromethane | 1.9 UJ | 1.9 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S003 | N | 10 Apr 2015 | 4 - 5 | SW8260B | VOC | Chlorotrifluoroethylene | 1.9 UJ | 1.9 | 9.6 | 10 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S003 | N | 10 Apr 2015 | 4 - 5 | SW8260B | VOC | cis-1,2-Dichloroethene | 0.96 UJ | 0.96 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S003 | N | 10 Apr 2015 | 4 - 5 | SW8260B | VOC | cis-1,3-Dichloropropene | 0.96 UJ | 0.96 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S003 | N | 10 Apr 2015 | 4 - 5 | SW8260B | VOC | Dibromochloromethane | 0.96 UJ | 0.96 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S003 | N | 10 Apr 2015 | 4 - 5 | SW8260B | VOC | Dibromomethane | 0.96 UJ | 0.96 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S003 | N | 10 Apr 2015 | 4 - 5 | SW8260B | VOC | Dichlorodifluoromethane | 1.9 UJ | 1.9 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S003 | N | 10 Apr 2015 | 4 - 5 | SW8260B | VOC | Ethylbenzene | 5.3 J | 0.96 | 4.8 | 5 | µg/kg | X | Y |
| SO | BVBS1298 | BVBS1298S003 | N | 10 Apr 2015 | 4 - 5 | SW8260B | VOC | Hexachlorobutadiene | 1.9 UJ | 1.9 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S003 | N | 10 Apr 2015 | 4 - 5 | SW8260B | VOC | Isopropylbenzene | 4.7 J | 0.96 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S003 | N | 10 Apr 2015 | 4 - 5 | SW8260B | VOC | m,p-Xylenes | 1.9 UJ | 1.9 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S003 | N | 10 Apr 2015 | 4 - 5 | SW8260B | VOC | Methylene chloride | 1.9 UJ | 1.9 | 9.6 | 10 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S003 | N | 10 Apr 2015 | 4 - 5 | SW8260B | VOC | Methyl-tert-butyl Ether (MTBE) | 0.96 UJ | 0.96 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S003 | N | 10 Apr 2015 | 4 - 5 | SW8260B | VOC | n-butylbenzene | 0.96 UJ | 0.96 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S003 | N | 10 Apr 2015 | 4 - 5 | SW8260B | VOC | n-Propylbenzene | 9.3 J | 0.96 | 4.8 | 5 | µg/kg | X | Y |
| SO | BVBS1298 | BVBS1298S003 | N | 10 Apr 2015 | 4 - 5 | SW8260B | VOC | o-Xylene | 2.5 J | 0.96 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S003 | N | 10 Apr 2015 | 4 - 5 | SW8260B | VOC | p-Isopropyltoluene | 1.5 J | 0.96 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S003 | N | 10 Apr 2015 | 4 - 5 | SW8260B | VOC | sec-Butylbenzene | 15 J | 0.96 | 4.8 | 5 | µg/kg | X | Y |
| SO | BVBS1298 | BVBS1298S003 | N | 10 Apr 2015 | 4 - 5 | SW8260B | VOC | Styrene | 0.96 UJ | 0.96 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S003 | N | 10 Apr 2015 | 4 - 5 | SW8260B | VOC | tert-Butanol (TBA) | 9.6 UJ | 9.6 | 48 | | µg/kg | | NC |
| SO | BVBS1298 | BVBS1298S003 | N | 10 Apr 2015 | 4 - 5 | SW8260B | VOC | tert-Butylbenzene | 1.1 J | 0.96 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S003 | N | 10 Apr 2015 | 4 - 5 | SW8260B | VOC | Tetrachloroethene | 0.96 UJ | 0.96 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S003 | N | 10 Apr 2015 | 4 - 5 | SW8260B | VOC | Toluene | 0.96 UJ | 0.96 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S003 | N | 10 Apr 2015 | 4 - 5 | SW8260B | VOC | trans-1,2-Dichloroethene | 0.96 UJ | 0.96 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S003 | N | 10 Apr 2015 | 4 - 5 | SW8260B | VOC | trans-1,3-Dichloropropene | 0.96 UJ | 0.96 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S003 | N | 10 Apr 2015 | 4 - 5 | SW8260B | VOC | Trichloroethene | 0.96 UJ | 0.96 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S003 | N | 10 Apr 2015 | 4 - 5 | SW8260B | VOC | Trichlorofluoromethane | 1.9 UJ | 1.9 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S003 | N | 10 Apr 2015 | 4 - 5 | SW8260B | VOC | Trichloromethane (Chloroform) | 0.96 UJ | 0.96 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S003 | N | 10 Apr 2015 | 4 - 5 | SW8260B | VOC | Vinyl chloride | 1.9 UJ | 1.9 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S004 | N | 10 Apr 2015 | 6 - 8 | SW9045D | GENCHEM | pH | 8.04 = | | | | pH units | | NC |
| SO | BVBS1298 | BVBS1298S004 | N | 10 Apr 2015 | 6 - 8 | M8015D | HC | Diesel Range Organics (C12-C14) | 330000 J | 2800 | 5700 | 5000 | µg/kg | X | Y |
| SO | BVBS1298 | BVBS1298S004 | N | 10 Apr 2015 | 6 - 8 | M8015D | HC | Diesel Range Organics (C15-C20) | 310000 J | 2800 | 5700 | 5000 | µg/kg | X | Y |
| SO | BVBS1298 | BVBS1298S004 | N | 10 Apr 2015 | 6 - 8 | M8015D | HC | Diesel Range Organics (C21-C30) | 22000 J | 2800 | 5700 | 5000 | µg/kg | X | Y |
| SO | BVBS1298 | BVBS1298S004 | N | 10 Apr 2015 | 6 - 8 | M8015D | HC | Diesel Range Organics (C8-C11) | 16000 U | 2800 | 5700 | 1000 | µg/kg | X | RL |
| SO | BVBS1298 | BVBS1298S004 | N | 10 Apr 2015 | 6 - 8 | SW8015B | HC | GRO (C4-C12) | 84000 = | 930 | 1900 | 1000 | µg/kg | X | Y |
| SO | BVBS1298 | BVBS1298S004 | N | 10 Apr 2015 | 6 - 8 | M8015D | HC | ORO (C31-C40) | 11000 U | 5700 | 11000 | 10000 | µg/kg | X | N |

APPENDIX E-2

**Analytical Data 2015 Biovent Sampling**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | SL | Units | Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1298 | BVBS1298S004 | N | 10 Apr 2015 | 6 - 8 | M8015D | HC | TOTAL EFH(C8-C40) | 680000 J | 2800 | 5700 | 10000 | µg/kg | X | Y |
| SO | BVBS1298 | BVBS1298S004 | N | 10 Apr 2015 | 6 - 8 | SW8270C-SIM | PAH | 1-Methylnaphthalene | 11 U | 5.7 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1298 | BVBS1298S004 | N | 10 Apr 2015 | 6 - 8 | SW8270C-SIM | PAH | 2-Methylnaphthalene | 11 U | 5.7 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1298 | BVBS1298S004 | N | 10 Apr 2015 | 6 - 8 | SW8270C-SIM | PAH | Acenaphthene | 11 U | 5.7 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1298 | BVBS1298S004 | N | 10 Apr 2015 | 6 - 8 | SW8270C-SIM | PAH | Acenaphthylene | 6.7 J | 5.7 | 11 | 2.5 | µg/kg | X | Y |
| SO | BVBS1298 | BVBS1298S004 | N | 10 Apr 2015 | 6 - 8 | SW8270C-SIM | PAH | Anthracene | 11 U | 5.7 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1298 | BVBS1298S004 | N | 10 Apr 2015 | 6 - 8 | SW8270C-SIM | PAH | Benzo(a)anthracene | 11 U | 5.7 | 11 |  | µg/kg |  | NC |
| SO | BVBS1298 | BVBS1298S004 | N | 10 Apr 2015 | 6 - 8 | SW8270C-SIM | PAH | Benzo(a)pyrene | 11 U | 5.7 | 11 |  | µg/kg |  | NC |
| SO | BVBS1298 | BVBS1298S004 | N | 10 Apr 2015 | 6 - 8 | SW8270C-SIM | PAH | Benzo(b)fluoranthene | 11 U | 5.7 | 11 |  | µg/kg |  | NC |
| SO | BVBS1298 | BVBS1298S004 | N | 10 Apr 2015 | 6 - 8 | SW8270C-SIM | PAH | Benzo(ghi)perylene | 11 U | 5.7 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1298 | BVBS1298S004 | N | 10 Apr 2015 | 6 - 8 | SW8270C-SIM | PAH | Benzo(k)fluoranthene | 11 U | 5.7 | 11 |  | µg/kg |  | NC |
| SO | BVBS1298 | BVBS1298S004 | N | 10 Apr 2015 | 6 - 8 | SW8270C-SIM | PAH | Chrysene | 11 U | 5.7 | 11 |  | µg/kg |  | NC |
| SO | BVBS1298 | BVBS1298S004 | N | 10 Apr 2015 | 6 - 8 | SW8270C-SIM | PAH | Dibenzo(a,h)anthracene | 11 U | 5.7 | 11 |  | µg/kg |  | NC |
| SO | BVBS1298 | BVBS1298S004 | N | 10 Apr 2015 | 6 - 8 | SW8270C-SIM | PAH | Fluoranthene | 13 = | 5.7 | 11 | 5.2 | µg/kg | X | Y |
| SO | BVBS1298 | BVBS1298S004 | N | 10 Apr 2015 | 6 - 8 | SW8270C-SIM | PAH | Fluorene | 11 U | 5.7 | 11 | 3.8 | µg/kg | X | RL |
| SO | BVBS1298 | BVBS1298S004 | N | 10 Apr 2015 | 6 - 8 | SW8270C-SIM | PAH | Indeno(1,2,3-cd)pyrene | 11 U | 5.7 | 11 |  | µg/kg |  | NC |
| SO | BVBS1298 | BVBS1298S004 | N | 10 Apr 2015 | 6 - 8 | SW8270C-SIM | PAH | Naphthalene | 11 U | 5.7 | 11 | 3.6 | µg/kg | X | RL |
| SO | BVBS1298 | BVBS1298S004 | N | 10 Apr 2015 | 6 - 8 | SW8270C-SIM | PAH | PAHTEQM | 0 U |  |  | 4.47 | µg/kg |  | N |
| SO | BVBS1298 | BVBS1298S004 | N | 10 Apr 2015 | 6 - 8 | SW8270C-SIM | PAH | Phenanthrene | 13 = | 5.7 | 11 | 3.9 | µg/kg | X | Y |
| SO | BVBS1298 | BVBS1298S004 | N | 10 Apr 2015 | 6 - 8 | SW8270C-SIM | PAH | Pyrene | 16 = | 5.7 | 11 | 5.6 | µg/kg | X | Y |
| SO | BVBS1298 | BVBS1298S004 | N | 10 Apr 2015 | 6 - 8 | SW8270C-SIM | PHTH | Bis(2-ethylhexyl)phthalate | 76 = | 11 | 23 | 61 | µg/kg | X | Y |
| SO | BVBS1298 | BVBS1298S004 | N | 10 Apr 2015 | 6 - 8 | SW8270C-SIM | PHTH | Butyl benzyl phthalate | 23 U | 11 | 23 | 100 | µg/kg |  | N |
| SO | BVBS1298 | BVBS1298S004 | N | 10 Apr 2015 | 6 - 8 | SW8270C-SIM | PHTH | Diethyl phthalate | 23 U | 11 | 23 | 27 | µg/kg |  | N |
| SO | BVBS1298 | BVBS1298S004 | N | 10 Apr 2015 | 6 - 8 | SW8270C-SIM | PHTH | Dimethyl phthalate | 23 U | 11 | 23 | 27 | µg/kg |  | N |
| SO | BVBS1298 | BVBS1298S004 | N | 10 Apr 2015 | 6 - 8 | SW8270C-SIM | PHTH | Di-n-butyl phthalate | 23 U | 11 | 23 | 27 | µg/kg |  | N |
| SO | BVBS1298 | BVBS1298S004 | N | 10 Apr 2015 | 6 - 8 | SW8270C-SIM | PHTH | Di-n-octyl phthalate | 23 U | 11 | 23 | 27 | µg/kg |  | N |
| SO | BVBS1298 | BVBS1298S004 | N | 10 Apr 2015 | 6 - 8 | SW8260B | SVOC | Diisopropyl ether | 0.9 U | 0.9 | 9 | 10 | µg/kg |  | N |
| SO | BVBS1298 | BVBS1298S004 | N | 10 Apr 2015 | 6 - 8 | SW8270C-SIM | SVOC | n-Nitrosodimethylamine | 23 U | 11 | 23 | 10 | µg/kg | X | RL |
| SO | BVBS1298 | BVBS1298S004 | N | 10 Apr 2015 | 6 - 8 | SW8260B | SVOC | tert-Amyl methyl ether | 0.9 U | 0.9 | 4.5 | 5 | µg/kg |  | N |
| SO | BVBS1298 | BVBS1298S004 | N | 10 Apr 2015 | 6 - 8 | SW8260B | SVOC | tert-Butyl ethyl ether | 0.9 U | 0.9 | 4.5 | 5 | µg/kg |  | N |
| SO | BVBS1298 | BVBS1298S004 | N | 10 Apr 2015 | 6 - 8 | SW8260B | VOC | 1,1,1,2-Tetrachloroethane | 0.9 U | 0.9 | 4.5 | 5 | µg/kg |  | N |
| SO | BVBS1298 | BVBS1298S004 | N | 10 Apr 2015 | 6 - 8 | SW8260B | VOC | 1,1,1-Trichloroethane | 0.9 U | 0.9 | 4.5 | 5 | µg/kg |  | N |
| SO | BVBS1298 | BVBS1298S004 | N | 10 Apr 2015 | 6 - 8 | SW8260B | VOC | 1,1,2,2-Tetrachloroethane | 0.9 U | 0.9 | 4.5 | 5 | µg/kg |  | N |
| SO | BVBS1298 | BVBS1298S004 | N | 10 Apr 2015 | 6 - 8 | SW8260B | VOC | 1,1,2-Trichloro-1,2,2-trifluoroethane | 1.8 U | 1.8 | 4.5 | 5 | µg/kg |  | N |
| SO | BVBS1298 | BVBS1298S004 | N | 10 Apr 2015 | 6 - 8 | SW8260B | VOC | 1,1,2-Trichloroethane | 0.9 U | 0.9 | 4.5 | 5 | µg/kg |  | N |
| SO | BVBS1298 | BVBS1298S004 | N | 10 Apr 2015 | 6 - 8 | SW8260B | VOC | 1,1-Dichloroethane | 0.9 U | 0.9 | 4.5 | 5 | µg/kg |  | N |

APPENDIX E-2

**Analytical Data 2015 Biovent Sampling**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | SL | Units | Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1298 | BVBS1298S004 | N | 10 Apr 2015 | 6 - 8 | SW8260B | VOC | 1,1-Dichloroethene | 0.9 U | 0.9 | 4.5 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S004 | N | 10 Apr 2015 | 6 - 8 | SW8260B | VOC | 1,1-Dichloropropene | 0.9 U | 0.9 | 4.5 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S004 | N | 10 Apr 2015 | 6 - 8 | SW8260B | VOC | 1,2,3-Trichlorobenzene | 1.8 U | 1.8 | 4.5 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S004 | N | 10 Apr 2015 | 6 - 8 | SW8260B | VOC | 1,2,3-Trichloropropane | 1.8 U | 1.8 | 4.5 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S004 | N | 10 Apr 2015 | 6 - 8 | SW8260B | VOC | 1,2,4-Trichlorobenzene | 1.8 U | 1.8 | 4.5 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S004 | N | 10 Apr 2015 | 6 - 8 | SW8260B | VOC | 1,2,4-Trimethylbenzene | 3 J | 0.9 | 4.5 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S004 | N | 10 Apr 2015 | 6 - 8 | SW8260B | VOC | 1,2-Dibromo-3-chloropropane | 1.8 U | 1.8 | 9 | 10 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S004 | N | 10 Apr 2015 | 6 - 8 | SW8260B | VOC | 1,2-Dibromoethane (EDB) | 0.9 U | 0.9 | 4.5 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S004 | N | 10 Apr 2015 | 6 - 8 | SW8260B | VOC | 1,2-Dichlorobenzene | 0.9 U | 0.9 | 4.5 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S004 | N | 10 Apr 2015 | 6 - 8 | SW8260B | VOC | 1,2-Dichloroethane | 0.9 U | 0.9 | 4.5 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S004 | N | 10 Apr 2015 | 6 - 8 | SW8260B | VOC | 1,2-Dichloropropane | 0.9 U | 0.9 | 4.5 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S004 | N | 10 Apr 2015 | 6 - 8 | SW8260B | VOC | 1,3,5-Trimethylbenzene | 1 J | 0.9 | 4.5 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S004 | N | 10 Apr 2015 | 6 - 8 | SW8260B | VOC | 1,3-Dichlorobenzene | 0.9 U | 0.9 | 4.5 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S004 | N | 10 Apr 2015 | 6 - 8 | SW8260B | VOC | 1,3-Dichloropropane | 0.9 U | 0.9 | 4.5 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S004 | N | 10 Apr 2015 | 6 - 8 | SW8260B | VOC | 1,4-Dichlorobenzene | 0.9 U | 0.9 | 4.5 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S004 | N | 10 Apr 2015 | 6 - 8 | SW8260B | VOC | 2,2-Dichloropropane | 1.8 U | 1.8 | 4.5 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S004 | N | 10 Apr 2015 | 6 - 8 | SW8260B | VOC | 2-Butanone (MEK) | 6 U | 4.5 | 18 | 20 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S004 | N | 10 Apr 2015 | 6 - 8 | SW8260B | VOC | 2-Chloro-1,1,1-trifluoroethane | 1.8 U | 1.8 | 9 | 10 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S004 | N | 10 Apr 2015 | 6 - 8 | SW8260B | VOC | 2-Chloroethyl vinyl ether | 1.8 U | 1.8 | 9 | 10 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S004 | N | 10 Apr 2015 | 6 - 8 | SW8260B | VOC | 2-Chlorotoluene | 0.9 U | 0.9 | 4.5 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S004 | N | 10 Apr 2015 | 6 - 8 | SW8260B | VOC | 2-Hexanone | 4.5 U | 4.5 | 9 | 10 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S004 | N | 10 Apr 2015 | 6 - 8 | SW8260B | VOC | 4-Chlorotoluene | 0.9 U | 0.9 | 9 | 10 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S004 | N | 10 Apr 2015 | 6 - 8 | SW8260B | VOC | 4-Methyl-2-pentanone (MIBK) | 4.5 U | 4.5 | 9 | 10 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S004 | N | 10 Apr 2015 | 6 - 8 | SW8260B | VOC | Acetone | 33 = | 4.5 | 18 | 20 | µg/kg | X | Y |
| SO | BVBS1298 | BVBS1298S004 | N | 10 Apr 2015 | 6 - 8 | SW8260B | VOC | Benzene | 0.9 U | 0.9 | 4.5 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S004 | N | 10 Apr 2015 | 6 - 8 | SW8260B | VOC | Bromobenzene | 0.9 U | 0.9 | 4.5 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S004 | N | 10 Apr 2015 | 6 - 8 | SW8260B | VOC | Bromochloromethane | 0.9 U | 0.9 | 4.5 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S004 | N | 10 Apr 2015 | 6 - 8 | SW8260B | VOC | Bromodichloromethane | 0.9 U | 0.9 | 4.5 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S004 | N | 10 Apr 2015 | 6 - 8 | SW8260B | VOC | Bromoform | 1.8 U | 1.8 | 4.5 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S004 | N | 10 Apr 2015 | 6 - 8 | SW8260B | VOC | Bromomethane | 1.8 U | 1.8 | 4.5 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S004 | N | 10 Apr 2015 | 6 - 8 | SW8260B | VOC | Carbon tetrachloride | 0.9 U | 0.9 | 4.5 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S004 | N | 10 Apr 2015 | 6 - 8 | SW8260B | VOC | Chlorobenzene | 0.9 U | 0.9 | 4.5 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S004 | N | 10 Apr 2015 | 6 - 8 | SW8260B | VOC | Chloroethane | 1.8 U | 1.8 | 4.5 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S004 | N | 10 Apr 2015 | 6 - 8 | SW8260B | VOC | Chloromethane | 1.8 U | 1.8 | 4.5 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S004 | N | 10 Apr 2015 | 6 - 8 | SW8260B | VOC | Chlorotrifluoroethylene | 1.8 U | 1.8 | 9 | 10 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S004 | N | 10 Apr 2015 | 6 - 8 | SW8260B | VOC | cis-1,2-Dichloroethene | 0.9 U | 0.9 | 4.5 | 5 | µg/kg | | N |

APPENDIX E-2

**Analytical Data 2015 Biovent Sampling**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | SL | Units | Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1298 | BVBS1298S004 | N | 10 Apr 2015 | 6 - 8 | SW8260B | VOC | cis-1,3-Dichloropropene | 0.9 U | 0.9 | 4.5 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S004 | N | 10 Apr 2015 | 6 - 8 | SW8260B | VOC | Dibromochloromethane | 0.9 U | 0.9 | 4.5 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S004 | N | 10 Apr 2015 | 6 - 8 | SW8260B | VOC | Dibromomethane | 0.9 U | 0.9 | 4.5 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S004 | N | 10 Apr 2015 | 6 - 8 | SW8260B | VOC | Dichlorodifluoromethane | 1.8 U | 1.8 | 4.5 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S004 | N | 10 Apr 2015 | 6 - 8 | SW8260B | VOC | Ethylbenzene | 0.9 U | 0.9 | 4.5 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S004 | N | 10 Apr 2015 | 6 - 8 | SW8260B | VOC | Hexachlorobutadiene | 1.8 U | 1.8 | 4.5 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S004 | N | 10 Apr 2015 | 6 - 8 | SW8260B | VOC | Isopropylbenzene | 0.9 U | 0.9 | 4.5 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S004 | N | 10 Apr 2015 | 6 - 8 | SW8260B | VOC | m,p-Xylenes | 1.8 U | 1.8 | 4.5 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S004 | N | 10 Apr 2015 | 6 - 8 | SW8260B | VOC | Methylene chloride | 1.8 U | 1.8 | 9 | 10 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S004 | N | 10 Apr 2015 | 6 - 8 | SW8260B | VOC | Methyl-tert-butyl Ether (MTBE) | 0.9 U | 0.9 | 4.5 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S004 | N | 10 Apr 2015 | 6 - 8 | SW8260B | VOC | n-butylbenzene | 3.1 J | 0.9 | 4.5 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S004 | N | 10 Apr 2015 | 6 - 8 | SW8260B | VOC | n-Propylbenzene | 1 J | 0.9 | 4.5 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S004 | N | 10 Apr 2015 | 6 - 8 | SW8260B | VOC | o-Xylene | 0.9 U | 0.9 | 4.5 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S004 | N | 10 Apr 2015 | 6 - 8 | SW8260B | VOC | p-Isopropyltoluene | 1.3 J | 0.9 | 4.5 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S004 | N | 10 Apr 2015 | 6 - 8 | SW8260B | VOC | sec-Butylbenzene | 2 J | 0.9 | 4.5 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S004 | N | 10 Apr 2015 | 6 - 8 | SW8260B | VOC | Styrene | 0.9 U | 0.9 | 4.5 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S004 | N | 10 Apr 2015 | 6 - 8 | SW8260B | VOC | tert-Butanol (TBA) | 9 U | 9 | 45 | | µg/kg | | NC |
| SO | BVBS1298 | BVBS1298S004 | N | 10 Apr 2015 | 6 - 8 | SW8260B | VOC | tert-Butylbenzene | 0.9 U | 0.9 | 4.5 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S004 | N | 10 Apr 2015 | 6 - 8 | SW8260B | VOC | Tetrachloroethene | 0.9 U | 0.9 | 4.5 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S004 | N | 10 Apr 2015 | 6 - 8 | SW8260B | VOC | Toluene | 0.9 U | 0.9 | 4.5 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S004 | N | 10 Apr 2015 | 6 - 8 | SW8260B | VOC | trans-1,2-Dichloroethene | 0.9 U | 0.9 | 4.5 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S004 | N | 10 Apr 2015 | 6 - 8 | SW8260B | VOC | trans-1,3-Dichloropropene | 0.9 U | 0.9 | 4.5 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S004 | N | 10 Apr 2015 | 6 - 8 | SW8260B | VOC | Trichloroethene | 0.9 U | 0.9 | 4.5 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S004 | N | 10 Apr 2015 | 6 - 8 | SW8260B | VOC | Trichlorofluoromethane | 1.8 U | 1.8 | 4.5 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S004 | N | 10 Apr 2015 | 6 - 8 | SW8260B | VOC | Trichloromethane (Chloroform) | 0.9 U | 0.9 | 4.5 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S004 | N | 10 Apr 2015 | 6 - 8 | SW8260B | VOC | Vinyl chloride | 1.8 U | 1.8 | 4.5 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S001 | N | 3 Mar 2015 | 4 - 5.5 | SW9045D | GENCHEM | pH | 6.22 = | | | | pH units | | NC |
| SO | BVBS1299 | BVBS1299S001 | N | 3 Mar 2015 | 4 - 5.5 | SW8015B | HC | Diesel Range Organics (C12-C14) | 3900000 = | 66000 | 1E+05 | 5000 | µg/kg | X | Y |
| SO | BVBS1299 | BVBS1299S001 | N | 3 Mar 2015 | 4 - 5.5 | SW8015B | HC | Diesel Range Organics (C15-C20) | 2700000 = | 66000 | 1E+05 | 5000 | µg/kg | X | Y |
| SO | BVBS1299 | BVBS1299S001 | N | 3 Mar 2015 | 4 - 5.5 | SW8015B | HC | Diesel Range Organics (C21-C30) | 130000 U | 66000 | 1E+05 | 5000 | µg/kg | X | RL |
| SO | BVBS1299 | BVBS1299S001 | N | 3 Mar 2015 | 4 - 5.5 | SW8015B | HC | Diesel Range Organics (C8-C11) | 1100000 = | 66000 | 1E+05 | 1000 | µg/kg | X | Y |
| SO | BVBS1299 | BVBS1299S001 | N | 3 Mar 2015 | 4 - 5.5 | SW8015B | HC | GRO (C4-C12) | 680000 = | 5700 | 11000 | 1000 | µg/kg | X | Y |
| SO | BVBS1299 | BVBS1299S001 | N | 3 Mar 2015 | 4 - 5.5 | SW8015B | HC | ORO (C31-C40) | 260000 U | 1E+05 | 3E+05 | 10000 | µg/kg | X | RL |
| SO | BVBS1299 | BVBS1299S001 | N | 3 Mar 2015 | 4 - 5.5 | SW8015B | HC | TOTAL EFH(C8-C40) | 7700000 = | 66000 | 1E+05 | 10000 | µg/kg | X | Y |
| SO | BVBS1299 | BVBS1299S001 | N | 3 Mar 2015 | 4 - 5.5 | SW8270C-SIM | PAH | 1-Methylnaphthalene | 13 U | 6.6 | 13 | 2.5 | µg/kg | X | RL |
| SO | BVBS1299 | BVBS1299S001 | N | 3 Mar 2015 | 4 - 5.5 | SW8270C-SIM | PAH | 2-Methylnaphthalene | 13 U | 6.6 | 13 | 2.5 | µg/kg | X | RL |

APPENDIX E-2

**Analytical Data 2015 Biovent Sampling**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | SL | Units | Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1299 | BVBS1299S001 | N | 3 Mar 2015 | 4 - 5.5 | SW8270C-SIM | PAH | Acenaphthene | 13 U | 6.6 | 13 | 2.5 | µg/kg | X | RL |
| SO | BVBS1299 | BVBS1299S001 | N | 3 Mar 2015 | 4 - 5.5 | SW8270C-SIM | PAH | Acenaphthylene | 13 U | 6.6 | 13 | 2.5 | µg/kg | X | RL |
| SO | BVBS1299 | BVBS1299S001 | N | 3 Mar 2015 | 4 - 5.5 | SW8270C-SIM | PAH | Anthracene | 14 = | 6.6 | 13 | 2.5 | µg/kg | X | Y |
| SO | BVBS1299 | BVBS1299S001 | N | 3 Mar 2015 | 4 - 5.5 | SW8270C-SIM | PAH | Benzo(a)anthracene | 29 = | 6.6 | 13 | | µg/kg | | NC |
| SO | BVBS1299 | BVBS1299S001 | N | 3 Mar 2015 | 4 - 5.5 | SW8270C-SIM | PAH | Benzo(a)pyrene | 19 = | 6.6 | 13 | | µg/kg | | NC |
| SO | BVBS1299 | BVBS1299S001 | N | 3 Mar 2015 | 4 - 5.5 | SW8270C-SIM | PAH | Benzo(b)fluoranthene | 38 = | 6.6 | 13 | | µg/kg | | NC |
| SO | BVBS1299 | BVBS1299S001 | N | 3 Mar 2015 | 4 - 5.5 | SW8270C-SIM | PAH | Benzo(ghi)perylene | 58 = | 6.6 | 13 | 2.5 | µg/kg | X | Y |
| SO | BVBS1299 | BVBS1299S001 | N | 3 Mar 2015 | 4 - 5.5 | SW8270C-SIM | PAH | Benzo(k)fluoranthene | 9.6 J | 6.6 | 13 | | µg/kg | | NC |
| SO | BVBS1299 | BVBS1299S001 | N | 3 Mar 2015 | 4 - 5.5 | SW8270C-SIM | PAH | Chrysene | 22 J | 6.6 | 13 | | µg/kg | | NC |
| SO | BVBS1299 | BVBS1299S001 | N | 3 Mar 2015 | 4 - 5.5 | SW8270C-SIM | PAH | Dibenzo(a,h)anthracene | 13 U | 6.6 | 13 | | µg/kg | | NC |
| SO | BVBS1299 | BVBS1299S001 | N | 3 Mar 2015 | 4 - 5.5 | SW8270C-SIM | PAH | Fluoranthene | 110 J | 6.6 | 13 | 5.2 | µg/kg | X | Y |
| SO | BVBS1299 | BVBS1299S001 | N | 3 Mar 2015 | 4 - 5.5 | SW8270C-SIM | PAH | Fluorene | 9.3 J | 6.6 | 13 | 3.8 | µg/kg | X | Y |
| SO | BVBS1299 | BVBS1299S001 | N | 3 Mar 2015 | 4 - 5.5 | SW8270C-SIM | PAH | Indeno(1,2,3-cd)pyrene | 35 = | 6.6 | 13 | | µg/kg | | NC |
| SO | BVBS1299 | BVBS1299S001 | N | 3 Mar 2015 | 4 - 5.5 | SW8270C-SIM | PAH | Naphthalene | 13 U | 6.6 | 13 | 3.6 | µg/kg | X | RL |
| SO | BVBS1299 | BVBS1299S001 | N | 3 Mar 2015 | 4 - 5.5 | SW8270C-SIM | PAH | PAHTEQM | 30.38 = | | | 4.47 | µg/kg | X | Y |
| SO | BVBS1299 | BVBS1299S001 | N | 3 Mar 2015 | 4 - 5.5 | SW8270C-SIM | PAH | Phenanthrene | 34 = | 6.6 | 13 | 3.9 | µg/kg | X | Y |
| SO | BVBS1299 | BVBS1299S001 | N | 3 Mar 2015 | 4 - 5.5 | SW8270C-SIM | PAH | Pyrene | 140 J | 6.6 | 13 | 5.6 | µg/kg | X | Y |
| SO | BVBS1299 | BVBS1299S001 | N | 3 Mar 2015 | 4 - 5.5 | SW8270C-SIM | PHTH | Bis(2-ethylhexyl)phthalate | 770 = | 13 | 26 | 61 | µg/kg | X | Y |
| SO | BVBS1299 | BVBS1299S001 | N | 3 Mar 2015 | 4 - 5.5 | SW8270C-SIM | PHTH | Butyl benzyl phthalate | 26 U | 13 | 26 | 100 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S001 | N | 3 Mar 2015 | 4 - 5.5 | SW8270C-SIM | PHTH | Diethyl phthalate | 26 U | 13 | 26 | 27 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S001 | N | 3 Mar 2015 | 4 - 5.5 | SW8270C-SIM | PHTH | Dimethyl phthalate | 26 U | 13 | 26 | 27 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S001 | N | 3 Mar 2015 | 4 - 5.5 | SW8270C-SIM | PHTH | Di-n-butyl phthalate | 26 U | 13 | 26 | 27 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S001 | N | 3 Mar 2015 | 4 - 5.5 | SW8270C-SIM | PHTH | Di-n-octyl phthalate | 25 J | 13 | 26 | 27 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S001 | N | 3 Mar 2015 | 4 - 5.5 | SW8260B | SVOC | Diisopropyl ether | 1.4 U | 1.4 | 14 | 10 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S001 | N | 3 Mar 2015 | 4 - 5.5 | SW8270C-SIM | SVOC | n-Nitrosodimethylamine | 26 U | 13 | 26 | 10 | µg/kg | X | RL |
| SO | BVBS1299 | BVBS1299S001 | N | 3 Mar 2015 | 4 - 5.5 | SW8260B | SVOC | tert-Amyl methyl ether | 1.4 U | 1.4 | 7.2 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S001 | N | 3 Mar 2015 | 4 - 5.5 | SW8260B | SVOC | tert-Butyl ethyl ether | 1.4 U | 1.4 | 7.2 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S001 | N | 3 Mar 2015 | 4 - 5.5 | SW8260B | VOC | 1,1,1,2-Tetrachloroethane | 1.4 U | 1.4 | 7.2 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S001 | N | 3 Mar 2015 | 4 - 5.5 | SW8260B | VOC | 1,1,1-Trichloroethane | 1.4 U | 1.4 | 7.2 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S001 | N | 3 Mar 2015 | 4 - 5.5 | SW8260B | VOC | 1,1,2,2-Tetrachloroethane | 1.4 U | 1.4 | 7.2 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S001 | N | 3 Mar 2015 | 4 - 5.5 | SW8260B | VOC | 1,1,2-Trichloro-1,2,2-trifluoroethane | 2.9 U | 2.9 | 7.2 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S001 | N | 3 Mar 2015 | 4 - 5.5 | SW8260B | VOC | 1,1,2-Trichloroethane | 1.4 U | 1.4 | 7.2 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S001 | N | 3 Mar 2015 | 4 - 5.5 | SW8260B | VOC | 1,1-Dichloroethane | 1.4 U | 1.4 | 7.2 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S001 | N | 3 Mar 2015 | 4 - 5.5 | SW8260B | VOC | 1,1-Dichloroethene | 1.4 U | 1.4 | 7.2 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S001 | N | 3 Mar 2015 | 4 - 5.5 | SW8260B | VOC | 1,1-Dichloropropene | 1.4 U | 1.4 | 7.2 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S001 | N | 3 Mar 2015 | 4 - 5.5 | SW8260B | VOC | 1,2,3-Trichlorobenzene | 2.9 U | 2.9 | 7.2 | 5 | µg/kg | | N |

APPENDIX E-2

**Analytical Data 2015 Biovent Sampling**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | SL | Units | Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1299 | BVBS1299S001 | N | 3 Mar 2015 | 4 - 5.5 | SW8260B | VOC | 1,2,3-Trichloropropane | 2.9 U | 2.9 | 7.2 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S001 | N | 3 Mar 2015 | 4 - 5.5 | SW8260B | VOC | 1,2,4-Trichlorobenzene | 2.9 U | 2.9 | 7.2 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S001 | N | 3 Mar 2015 | 4 - 5.5 | SW8260B | VOC | 1,2,4-Trimethylbenzene | 1.4 U | 1.4 | 7.2 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S001 | N | 3 Mar 2015 | 4 - 5.5 | SW8260B | VOC | 1,2-Dibromo-3-chloropropane | 2.9 U | 2.9 | 14 | 10 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S001 | N | 3 Mar 2015 | 4 - 5.5 | SW8260B | VOC | 1,2-Dibromoethane (EDB) | 1.4 U | 1.4 | 7.2 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S001 | N | 3 Mar 2015 | 4 - 5.5 | SW8260B | VOC | 1,2-Dichlorobenzene | 1.4 U | 1.4 | 7.2 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S001 | N | 3 Mar 2015 | 4 - 5.5 | SW8260B | VOC | 1,2-Dichloroethane | 1.4 U | 1.4 | 7.2 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S001 | N | 3 Mar 2015 | 4 - 5.5 | SW8260B | VOC | 1,2-Dichloropropane | 1.4 U | 1.4 | 7.2 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S001 | N | 3 Mar 2015 | 4 - 5.5 | SW8260B | VOC | 1,3,5-Trimethylbenzene | 1.4 U | 1.4 | 7.2 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S001 | N | 3 Mar 2015 | 4 - 5.5 | SW8260B | VOC | 1,3-Dichlorobenzene | 1.4 U | 1.4 | 7.2 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S001 | N | 3 Mar 2015 | 4 - 5.5 | SW8260B | VOC | 1,3-Dichloropropane | 1.4 U | 1.4 | 7.2 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S001 | N | 3 Mar 2015 | 4 - 5.5 | SW8260B | VOC | 1,4-Dichlorobenzene | 1.4 U | 1.4 | 7.2 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S001 | N | 3 Mar 2015 | 4 - 5.5 | SW8260B | VOC | 2,2-Dichloropropane | 2.9 U | 2.9 | 7.2 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S001 | N | 3 Mar 2015 | 4 - 5.5 | SW8260B | VOC | 2-Butanone (MEK) | 7.2 U | 7.2 | 29 | 20 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S001 | N | 3 Mar 2015 | 4 - 5.5 | SW8260B | VOC | 2-Chloro-1,1,1-trifluoroethane | 2.9 U | 2.9 | 14 | 10 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S001 | N | 3 Mar 2015 | 4 - 5.5 | SW8260B | VOC | 2-Chloroethyl vinyl ether | 2.9 U | 2.9 | 14 | 10 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S001 | N | 3 Mar 2015 | 4 - 5.5 | SW8260B | VOC | 2-Chlorotoluene | 1.4 U | 1.4 | 7.2 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S001 | N | 3 Mar 2015 | 4 - 5.5 | SW8260B | VOC | 2-Hexanone | 7.2 U | 7.2 | 14 | 10 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S001 | N | 3 Mar 2015 | 4 - 5.5 | SW8260B | VOC | 4-Chlorotoluene | 1.4 U | 1.4 | 14 | 10 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S001 | N | 3 Mar 2015 | 4 - 5.5 | SW8260B | VOC | 4-Methyl-2-pentanone (MIBK) | 7.2 U | 7.2 | 14 | 10 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S001 | N | 3 Mar 2015 | 4 - 5.5 | SW8260B | VOC | Acetone | 28 J | 7.2 | 29 | 20 | µg/kg | X | Y |
| SO | BVBS1299 | BVBS1299S001 | N | 3 Mar 2015 | 4 - 5.5 | SW8260B | VOC | Benzene | 1.4 U | 1.4 | 7.2 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S001 | N | 3 Mar 2015 | 4 - 5.5 | SW8260B | VOC | Bromobenzene | 1.4 U | 1.4 | 7.2 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S001 | N | 3 Mar 2015 | 4 - 5.5 | SW8260B | VOC | Bromochloromethane | 1.4 U | 1.4 | 7.2 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S001 | N | 3 Mar 2015 | 4 - 5.5 | SW8260B | VOC | Bromodichloromethane | 1.4 U | 1.4 | 7.2 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S001 | N | 3 Mar 2015 | 4 - 5.5 | SW8260B | VOC | Bromoform | 2.9 U | 2.9 | 7.2 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S001 | N | 3 Mar 2015 | 4 - 5.5 | SW8260B | VOC | Bromomethane | 2.9 U | 2.9 | 7.2 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S001 | N | 3 Mar 2015 | 4 - 5.5 | SW8260B | VOC | Carbon tetrachloride | 1.4 U | 1.4 | 7.2 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S001 | N | 3 Mar 2015 | 4 - 5.5 | SW8260B | VOC | Chlorobenzene | 1.4 U | 1.4 | 7.2 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S001 | N | 3 Mar 2015 | 4 - 5.5 | SW8260B | VOC | Chloroethane | 2.9 U | 2.9 | 7.2 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S001 | N | 3 Mar 2015 | 4 - 5.5 | SW8260B | VOC | Chloromethane | 2.9 U | 2.9 | 7.2 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S001 | N | 3 Mar 2015 | 4 - 5.5 | SW8260B | VOC | Chlorotrifluoroethylene | 2.9 U | 2.9 | 14 | 10 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S001 | N | 3 Mar 2015 | 4 - 5.5 | SW8260B | VOC | cis-1,2-Dichloroethene | 1.4 U | 1.4 | 7.2 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S001 | N | 3 Mar 2015 | 4 - 5.5 | SW8260B | VOC | cis-1,3-Dichloropropene | 1.4 U | 1.4 | 7.2 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S001 | N | 3 Mar 2015 | 4 - 5.5 | SW8260B | VOC | Dibromochloromethane | 1.4 U | 1.4 | 7.2 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S001 | N | 3 Mar 2015 | 4 - 5.5 | SW8260B | VOC | Dibromomethane | 1.4 U | 1.4 | 7.2 | 5 | µg/kg | | N |

APPENDIX E-2

**Analytical Data 2015 Biovent Sampling**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | SL | Units | Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1299 | BVBS1299S001 | N | 3 Mar 2015 | 4 - 5.5 | SW8260B | VOC | Dichlorodifluoromethane | 2.9 U | 2.9 | 7.2 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S001 | N | 3 Mar 2015 | 4 - 5.5 | SW8260B | VOC | Ethylbenzene | 2.6 J | 1.4 | 7.2 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S001 | N | 3 Mar 2015 | 4 - 5.5 | SW8260B | VOC | Hexachlorobutadiene | 2.9 U | 2.9 | 7.2 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S001 | N | 3 Mar 2015 | 4 - 5.5 | SW8260B | VOC | Isopropylbenzene | 3.7 J | 1.4 | 7.2 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S001 | N | 3 Mar 2015 | 4 - 5.5 | SW8260B | VOC | m,p-Xylenes | 2.9 U | 2.9 | 7.2 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S001 | N | 3 Mar 2015 | 4 - 5.5 | SW8260B | VOC | Methylene chloride | 3.7 J | 2.9 | 14 | 10 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S001 | N | 3 Mar 2015 | 4 - 5.5 | SW8260B | VOC | Methyl-tert-butyl Ether (MTBE) | 1.4 U | 1.4 | 7.2 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S001 | N | 3 Mar 2015 | 4 - 5.5 | SW8260B | VOC | n-butylbenzene | 1.4 U | 1.4 | 7.2 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S001 | N | 3 Mar 2015 | 4 - 5.5 | SW8260B | VOC | n-Propylbenzene | 6.4 J | 1.4 | 7.2 | 5 | µg/kg | X | Y |
| SO | BVBS1299 | BVBS1299S001 | N | 3 Mar 2015 | 4 - 5.5 | SW8260B | VOC | o-Xylene | 1.6 J | 1.4 | 7.2 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S001 | N | 3 Mar 2015 | 4 - 5.5 | SW8260B | VOC | p-Isopropyltoluene | 1.4 U | 1.4 | 7.2 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S001 | N | 3 Mar 2015 | 4 - 5.5 | SW8260B | VOC | sec-Butylbenzene | 24 = | 1.4 | 7.2 | 5 | µg/kg | X | Y |
| SO | BVBS1299 | BVBS1299S001 | N | 3 Mar 2015 | 4 - 5.5 | SW8260B | VOC | Styrene | 1.4 U | 1.4 | 7.2 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S001 | N | 3 Mar 2015 | 4 - 5.5 | SW8260B | VOC | tert-Butanol (TBA) | 14 U | 14 | 72 | | µg/kg | | NC |
| SO | BVBS1299 | BVBS1299S001 | N | 3 Mar 2015 | 4 - 5.5 | SW8260B | VOC | tert-Butylbenzene | 2.2 J | 1.4 | 7.2 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S001 | N | 3 Mar 2015 | 4 - 5.5 | SW8260B | VOC | Tetrachloroethene | 1.4 U | 1.4 | 7.2 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S001 | N | 3 Mar 2015 | 4 - 5.5 | SW8260B | VOC | Toluene | 1.4 U | 1.4 | 7.2 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S001 | N | 3 Mar 2015 | 4 - 5.5 | SW8260B | VOC | trans-1,2-Dichloroethene | 1.4 U | 1.4 | 7.2 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S001 | N | 3 Mar 2015 | 4 - 5.5 | SW8260B | VOC | trans-1,3-Dichloropropene | 1.4 U | 1.4 | 7.2 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S001 | N | 3 Mar 2015 | 4 - 5.5 | SW8260B | VOC | Trichloroethene | 1.5 J | 1.4 | 7.2 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S001 | N | 3 Mar 2015 | 4 - 5.5 | SW8260B | VOC | Trichlorofluoromethane | 2.9 U | 2.9 | 7.2 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S001 | N | 3 Mar 2015 | 4 - 5.5 | SW8260B | VOC | Trichloromethane (Chloroform) | 1.4 U | 1.4 | 7.2 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S001 | N | 3 Mar 2015 | 4 - 5.5 | SW8260B | VOC | Vinyl chloride | 2.9 U | 2.9 | 7.2 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S002 | N | 3 Mar 2015 | 7 - 8 | SW9045D | GENCHEM | pH | 8.22 = | | | | pH units | | NC |
| SO | BVBS1299 | BVBS1299S002 | N | 3 Mar 2015 | 7 - 8 | SW8015B | HC | Diesel Range Organics (C12-C14) | 5800 = | 2700 | 5400 | 5000 | µg/kg | X | Y |
| SO | BVBS1299 | BVBS1299S002 | N | 3 Mar 2015 | 7 - 8 | SW8015B | HC | Diesel Range Organics (C15-C20) | 20000 = | 2700 | 5400 | 5000 | µg/kg | X | Y |
| SO | BVBS1299 | BVBS1299S002 | N | 3 Mar 2015 | 7 - 8 | SW8015B | HC | Diesel Range Organics (C21-C30) | 5400 U | 2700 | 5400 | 5000 | µg/kg | X | N |
| SO | BVBS1299 | BVBS1299S002 | N | 3 Mar 2015 | 7 - 8 | SW8015B | HC | Diesel Range Organics (C8-C11) | 5400 U | 2700 | 5400 | 1000 | µg/kg | X | RL |
| SO | BVBS1299 | BVBS1299S002 | N | 3 Mar 2015 | 7 - 8 | SW8015B | HC | GRO (C4-C12) | 11000 = | 490 | 990 | 1000 | µg/kg | X | Y |
| SO | BVBS1299 | BVBS1299S002 | N | 3 Mar 2015 | 7 - 8 | SW8015B | HC | ORO (C31-C40) | 11000 U | 5400 | 11000 | 10000 | µg/kg | X | N |
| SO | BVBS1299 | BVBS1299S002 | N | 3 Mar 2015 | 7 - 8 | SW8015B | HC | TOTAL EFH(C8-C40) | 27000 = | 2700 | 5400 | 10000 | µg/kg | X | Y |
| SO | BVBS1299 | BVBS1299S002 | N | 3 Mar 2015 | 7 - 8 | SW8270C-SIM | PAH | 1-Methylnaphthalene | 11 U | 5.4 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1299 | BVBS1299S002 | N | 3 Mar 2015 | 7 - 8 | SW8270C-SIM | PAH | 2-Methylnaphthalene | 11 U | 5.4 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1299 | BVBS1299S002 | N | 3 Mar 2015 | 7 - 8 | SW8270C-SIM | PAH | Acenaphthene | 11 U | 5.4 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1299 | BVBS1299S002 | N | 3 Mar 2015 | 7 - 8 | SW8270C-SIM | PAH | Acenaphthylene | 11 U | 5.4 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1299 | BVBS1299S002 | N | 3 Mar 2015 | 7 - 8 | SW8270C-SIM | PAH | Anthracene | 11 U | 5.4 | 11 | 2.5 | µg/kg | X | RL |

APPENDIX E-2

**Analytical Data 2015 Biovent Sampling**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | SL | Units | Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1299 | BVBS1299S002 | N | 3 Mar 2015 | 7 - 8 | SW8270C-SIM | PAH | Benzo(a)anthracene | 11 U | 5.4 | 11 | | µg/kg | | NC |
| SO | BVBS1299 | BVBS1299S002 | N | 3 Mar 2015 | 7 - 8 | SW8270C-SIM | PAH | Benzo(a)pyrene | 11 U | 5.4 | 11 | | µg/kg | | NC |
| SO | BVBS1299 | BVBS1299S002 | N | 3 Mar 2015 | 7 - 8 | SW8270C-SIM | PAH | Benzo(b)fluoranthene | 11 U | 5.4 | 11 | | µg/kg | | NC |
| SO | BVBS1299 | BVBS1299S002 | N | 3 Mar 2015 | 7 - 8 | SW8270C-SIM | PAH | Benzo(ghi)perylene | 11 U | 5.4 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1299 | BVBS1299S002 | N | 3 Mar 2015 | 7 - 8 | SW8270C-SIM | PAH | Benzo(k)fluoranthene | 11 U | 5.4 | 11 | | µg/kg | | NC |
| SO | BVBS1299 | BVBS1299S002 | N | 3 Mar 2015 | 7 - 8 | SW8270C-SIM | PAH | Chrysene | 11 U | 5.4 | 11 | | µg/kg | | NC |
| SO | BVBS1299 | BVBS1299S002 | N | 3 Mar 2015 | 7 - 8 | SW8270C-SIM | PAH | Dibenzo(a,h)anthracene | 11 U | 5.4 | 11 | | µg/kg | | NC |
| SO | BVBS1299 | BVBS1299S002 | N | 3 Mar 2015 | 7 - 8 | SW8270C-SIM | PAH | Fluoranthene | 11 U | 5.4 | 11 | 5.2 | µg/kg | X | RL |
| SO | BVBS1299 | BVBS1299S002 | N | 3 Mar 2015 | 7 - 8 | SW8270C-SIM | PAH | Fluorene | 11 U | 5.4 | 11 | 3.8 | µg/kg | X | RL |
| SO | BVBS1299 | BVBS1299S002 | N | 3 Mar 2015 | 7 - 8 | SW8270C-SIM | PAH | Indeno(1,2,3-cd)pyrene | 11 U | 5.4 | 11 | | µg/kg | | NC |
| SO | BVBS1299 | BVBS1299S002 | N | 3 Mar 2015 | 7 - 8 | SW8270C-SIM | PAH | Naphthalene | 11 U | 5.4 | 11 | 3.6 | µg/kg | X | RL |
| SO | BVBS1299 | BVBS1299S002 | N | 3 Mar 2015 | 7 - 8 | SW8270C-SIM | PAH | PAHTEQM | 0 U | | | 4.47 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S002 | N | 3 Mar 2015 | 7 - 8 | SW8270C-SIM | PAH | Phenanthrene | 11 U | 5.4 | 11 | 3.9 | µg/kg | X | RL |
| SO | BVBS1299 | BVBS1299S002 | N | 3 Mar 2015 | 7 - 8 | SW8270C-SIM | PAH | Pyrene | 11 U | 5.4 | 11 | 5.6 | µg/kg | X | N |
| SO | BVBS1299 | BVBS1299S002 | N | 3 Mar 2015 | 7 - 8 | SW8270C-SIM | PHTH | Bis(2-ethylhexyl)phthalate | 22 U | 11 | 22 | 61 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S002 | N | 3 Mar 2015 | 7 - 8 | SW8270C-SIM | PHTH | Butyl benzyl phthalate | 22 U | 11 | 22 | 100 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S002 | N | 3 Mar 2015 | 7 - 8 | SW8270C-SIM | PHTH | Diethyl phthalate | 22 U | 11 | 22 | 27 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S002 | N | 3 Mar 2015 | 7 - 8 | SW8270C-SIM | PHTH | Dimethyl phthalate | 22 U | 11 | 22 | 27 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S002 | N | 3 Mar 2015 | 7 - 8 | SW8270C-SIM | PHTH | Di-n-butyl phthalate | 22 U | 11 | 22 | 27 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S002 | N | 3 Mar 2015 | 7 - 8 | SW8270C-SIM | PHTH | Di-n-octyl phthalate | 22 U | 11 | 22 | 27 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | SVOC | Diisopropyl ether | 0.95 U | 0.95 | 9.5 | 10 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S002 | N | 3 Mar 2015 | 7 - 8 | SW8270C-SIM | SVOC | n-Nitrosodimethylamine | 22 U | 11 | 22 | 10 | µg/kg | X | RL |
| SO | BVBS1299 | BVBS1299S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | SVOC | tert-Amyl methyl ether | 0.95 U | 0.95 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | SVOC | tert-Butyl ethyl ether | 0.95 U | 0.95 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | 1,1,1,2-Tetrachloroethane | 0.95 U | 0.95 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | 1,1,1-Trichloroethane | 0.95 U | 0.95 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | 1,1,2,2-Tetrachloroethane | 0.95 U | 0.95 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | 1,1,2-Trichloro-1,2,2-trifluoroethane | 1.9 U | 1.9 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | 1,1,2-Trichloroethane | 0.95 U | 0.95 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | 1,1-Dichloroethane | 0.95 U | 0.95 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | 1,1-Dichloroethene | 0.95 U | 0.95 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | 1,1-Dichloropropene | 0.95 U | 0.95 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | 1,2,3-Trichlorobenzene | 1.9 U | 1.9 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | 1,2,3-Trichloropropane | 1.9 U | 1.9 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | 1,2,4-Trichlorobenzene | 1.9 U | 1.9 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | 1,2,4-Trimethylbenzene | 0.95 U | 0.95 | 4.7 | 5 | µg/kg | | N |

APPENDIX E-2

**Analytical Data 2015 Biovent Sampling**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | SL | Units | Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1299 | BVBS1299S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | 1,2-Dibromo-3-chloropropane | 1.9 U | 1.9 | 9.5 | 10 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | 1,2-Dibromoethane (EDB) | 0.95 U | 0.95 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | 1,2-Dichlorobenzene | 0.95 U | 0.95 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | 1,2-Dichloroethane | 0.95 U | 0.95 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | 1,2-Dichloropropane | 0.95 U | 0.95 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | 1,3,5-Trimethylbenzene | 0.95 U | 0.95 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | 1,3-Dichlorobenzene | 0.95 U | 0.95 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | 1,3-Dichloropropane | 0.95 U | 0.95 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | 1,4-Dichlorobenzene | 0.95 U | 0.95 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | 2,2-Dichloropropane | 1.9 U | 1.9 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | 2-Butanone (MEK) | 4.7 U | 4.7 | 19 | 20 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | 2-Chloro-1,1,1-trifluoroethane | 1.9 U | 1.9 | 9.5 | 10 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | 2-Chloroethyl vinyl ether | 1.9 U | 1.9 | 9.5 | 10 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | 2-Chlorotoluene | 0.95 U | 0.95 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | 2-Hexanone | 4.7 U | 4.7 | 9.5 | 10 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | 4-Chlorotoluene | 0.95 U | 0.95 | 9.5 | 10 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | 4-Methyl-2-pentanone (MIBK) | 4.7 U | 4.7 | 9.5 | 10 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | Acetone | 4.7 U | 4.7 | 19 | 20 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | Benzene | 0.95 U | 0.95 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | Bromobenzene | 0.95 U | 0.95 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | Bromochloromethane | 0.95 U | 0.95 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | Bromodichloromethane | 0.95 U | 0.95 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | Bromoform | 1.9 U | 1.9 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | Bromomethane | 1.9 U | 1.9 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | Carbon tetrachloride | 0.95 U | 0.95 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | Chlorobenzene | 0.95 U | 0.95 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | Chloroethane | 1.9 U | 1.9 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | Chloromethane | 1.9 U | 1.9 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | Chlorotrifluoroethylene | 1.9 U | 1.9 | 9.5 | 10 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | cis-1,2-Dichloroethene | 0.95 U | 0.95 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | cis-1,3-Dichloropropene | 0.95 U | 0.95 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | Dibromochloromethane | 0.95 U | 0.95 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | Dibromomethane | 0.95 U | 0.95 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | Dichlorodifluoromethane | 1.9 U | 1.9 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | Ethylbenzene | 0.95 U | 0.95 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | Hexachlorobutadiene | 1.9 U | 1.9 | 4.7 | 5 | µg/kg | | N |

APPENDIX E-2

**Analytical Data 2015 Biovent Sampling**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | SL | Units | Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1299 | BVBS1299S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | Isopropylbenzene | 0.95 U | 0.95 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | m,p-Xylenes | 1.9 U | 1.9 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | Methylene chloride | 2.1 J | 1.9 | 9.5 | 10 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | Methyl-tert-butyl Ether (MTBE) | 0.95 U | 0.95 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | n-butylbenzene | 0.95 U | 0.95 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | n-Propylbenzene | 0.95 U | 0.95 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | o-Xylene | 0.95 U | 0.95 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | p-Isopropyltoluene | 0.95 U | 0.95 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | sec-Butylbenzene | 0.95 U | 0.95 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | Styrene | 0.95 U | 0.95 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | tert-Butanol (TBA) | 9.5 U | 9.5 | 47 | | µg/kg | | NC |
| SO | BVBS1299 | BVBS1299S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | tert-Butylbenzene | 0.95 U | 0.95 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | Tetrachloroethene | 0.95 U | 0.95 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | Toluene | 0.95 U | 0.95 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | trans-1,2-Dichloroethene | 0.95 U | 0.95 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | trans-1,3-Dichloropropene | 0.95 U | 0.95 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | Trichloroethene | 0.95 U | 0.95 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | Trichlorofluoromethane | 1.9 U | 1.9 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | Trichloromethane (Chloroform) | 0.95 U | 0.95 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S002 | N | 3 Mar 2015 | 7 - 8 | SW8260B | VOC | Vinyl chloride | 1.9 U | 1.9 | 4.7 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S003 | N | 10 Apr 2015 | 4 - 5.5 | SW9045D | GENCHEM | pH | 6.48 = | | | | pH units | | NC |
| SO | BVBS1299 | BVBS1299S003 | N | 10 Apr 2015 | 4 - 5.5 | M8015D | HC | Diesel Range Organics (C12-C14) | 1500000 = | 2900 | 5800 | 5000 | µg/kg | X | Y |
| SO | BVBS1299 | BVBS1299S003 | N | 10 Apr 2015 | 4 - 5.5 | M8015D | HC | Diesel Range Organics (C15-C20) | 1400000 = | 2900 | 5800 | 5000 | µg/kg | X | Y |
| SO | BVBS1299 | BVBS1299S003 | N | 10 Apr 2015 | 4 - 5.5 | M8015D | HC | Diesel Range Organics (C21-C30) | 81000 = | 2900 | 5800 | 5000 | µg/kg | X | Y |
| SO | BVBS1299 | BVBS1299S003 | N | 10 Apr 2015 | 4 - 5.5 | M8015D | HC | Diesel Range Organics (C8-C11) | 230000 = | 2900 | 5800 | 1000 | µg/kg | X | Y |
| SO | BVBS1299 | BVBS1299S003 | N | 10 Apr 2015 | 4 - 5.5 | SW8015B | HC | GRO (C4-C12) | 390000 = | 5500 | 11000 | 1000 | µg/kg | X | Y |
| SO | BVBS1299 | BVBS1299S003 | N | 10 Apr 2015 | 4 - 5.5 | M8015D | HC | ORO (C31-C40) | 11000 J | 5800 | 12000 | 10000 | µg/kg | X | Y |
| SO | BVBS1299 | BVBS1299S003 | N | 10 Apr 2015 | 4 - 5.5 | M8015D | HC | TOTAL EFH(C8-C40) | 3200000 = | 2900 | 5800 | 10000 | µg/kg | X | Y |
| SO | BVBS1299 | BVBS1299S003 | N | 10 Apr 2015 | 4 - 5.5 | SW8270C-SIM | PAH | 1-Methylnaphthalene | 12 U | 5.8 | 12 | 2.5 | µg/kg | X | RL |
| SO | BVBS1299 | BVBS1299S003 | N | 10 Apr 2015 | 4 - 5.5 | SW8270C-SIM | PAH | 2-Methylnaphthalene | 12 U | 5.8 | 12 | 2.5 | µg/kg | X | RL |
| SO | BVBS1299 | BVBS1299S003 | N | 10 Apr 2015 | 4 - 5.5 | SW8270C-SIM | PAH | Acenaphthene | 12 U | 5.8 | 12 | 2.5 | µg/kg | X | RL |
| SO | BVBS1299 | BVBS1299S003 | N | 10 Apr 2015 | 4 - 5.5 | SW8270C-SIM | PAH | Acenaphthylene | 12 U | 5.8 | 12 | 2.5 | µg/kg | X | RL |
| SO | BVBS1299 | BVBS1299S003 | N | 10 Apr 2015 | 4 - 5.5 | SW8270C-SIM | PAH | Anthracene | 10 J | 5.8 | 12 | 2.5 | µg/kg | X | Y |
| SO | BVBS1299 | BVBS1299S003 | N | 10 Apr 2015 | 4 - 5.5 | SW8270C-SIM | PAH | Benzo(a)anthracene | 16 = | 5.8 | 12 | | µg/kg | | NC |
| SO | BVBS1299 | BVBS1299S003 | N | 10 Apr 2015 | 4 - 5.5 | SW8270C-SIM | PAH | Benzo(a)pyrene | 11 J | 5.8 | 12 | | µg/kg | | NC |
| SO | BVBS1299 | BVBS1299S003 | N | 10 Apr 2015 | 4 - 5.5 | SW8270C-SIM | PAH | Benzo(b)fluoranthene | 28 = | 5.8 | 12 | | µg/kg | | NC |

APPENDIX E-2

**Analytical Data 2015 Biovent Sampling**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | SL | Units | Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1299 | BVBS1299S003 | N | 10 Apr 2015 | 4 - 5.5 | SW8270C-SIM | PAH | Benzo(ghi)perylene | 37 = | 5.8 | 12 | 2.5 | µg/kg | X | Y |
| SO | BVBS1299 | BVBS1299S003 | N | 10 Apr 2015 | 4 - 5.5 | SW8270C-SIM | PAH | Benzo(k)fluoranthene | 10 J | 5.8 | 12 | | µg/kg | | NC |
| SO | BVBS1299 | BVBS1299S003 | N | 10 Apr 2015 | 4 - 5.5 | SW8270C-SIM | PAH | Chrysene | 12 = | 5.8 | 12 | | µg/kg | | NC |
| SO | BVBS1299 | BVBS1299S003 | N | 10 Apr 2015 | 4 - 5.5 | SW8270C-SIM | PAH | Dibenzo(a,h)anthracene | 12 U | 5.8 | 12 | | µg/kg | | NC |
| SO | BVBS1299 | BVBS1299S003 | N | 10 Apr 2015 | 4 - 5.5 | SW8270C-SIM | PAH | Fluoranthene | 66 = | 5.8 | 12 | 5.2 | µg/kg | X | Y |
| SO | BVBS1299 | BVBS1299S003 | N | 10 Apr 2015 | 4 - 5.5 | SW8270C-SIM | PAH | Fluorene | 12 U | 5.8 | 12 | 3.8 | µg/kg | X | RL |
| SO | BVBS1299 | BVBS1299S003 | N | 10 Apr 2015 | 4 - 5.5 | SW8270C-SIM | PAH | Indeno(1,2,3-cd)pyrene | 23 = | 5.8 | 12 | | µg/kg | | NC |
| SO | BVBS1299 | BVBS1299S003 | N | 10 Apr 2015 | 4 - 5.5 | SW8270C-SIM | PAH | Naphthalene | 8.8 J | 5.8 | 12 | 3.6 | µg/kg | X | Y |
| SO | BVBS1299 | BVBS1299S003 | N | 10 Apr 2015 | 4 - 5.5 | SW8270C-SIM | PAH | PAHTEQM | 18.82 = | | | 4.47 | µg/kg | X | Y |
| SO | BVBS1299 | BVBS1299S003 | N | 10 Apr 2015 | 4 - 5.5 | SW8270C-SIM | PAH | Phenanthrene | 17 = | 5.8 | 12 | 3.9 | µg/kg | X | Y |
| SO | BVBS1299 | BVBS1299S003 | N | 10 Apr 2015 | 4 - 5.5 | SW8270C-SIM | PAH | Pyrene | 83 = | 5.8 | 12 | 5.6 | µg/kg | X | Y |
| SO | BVBS1299 | BVBS1299S003 | N | 10 Apr 2015 | 4 - 5.5 | SW8270C-SIM | PHTH | Bis(2-ethylhexyl)phthalate | 540 = | 12 | 23 | 61 | µg/kg | X | Y |
| SO | BVBS1299 | BVBS1299S003 | N | 10 Apr 2015 | 4 - 5.5 | SW8270C-SIM | PHTH | Butyl benzyl phthalate | 23 U | 12 | 23 | 100 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S003 | N | 10 Apr 2015 | 4 - 5.5 | SW8270C-SIM | PHTH | Diethyl phthalate | 23 U | 12 | 23 | 27 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S003 | N | 10 Apr 2015 | 4 - 5.5 | SW8270C-SIM | PHTH | Dimethyl phthalate | 23 U | 12 | 23 | 27 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S003 | N | 10 Apr 2015 | 4 - 5.5 | SW8270C-SIM | PHTH | Di-n-butyl phthalate | 23 U | 12 | 23 | 27 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S003 | N | 10 Apr 2015 | 4 - 5.5 | SW8270C-SIM | PHTH | Di-n-octyl phthalate | 23 U | 12 | 23 | 27 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S003 | N | 10 Apr 2015 | 4 - 5.5 | SW8260B | SVOC | Diisopropyl ether | 1 UJ | 1 | 10 | 10 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S003 | N | 10 Apr 2015 | 4 - 5.5 | SW8270C-SIM | SVOC | n-Nitrosodimethylamine | 23 U | 12 | 23 | 10 | µg/kg | X | RL |
| SO | BVBS1299 | BVBS1299S003 | N | 10 Apr 2015 | 4 - 5.5 | SW8260B | SVOC | tert-Amyl methyl ether | 1 UJ | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S003 | N | 10 Apr 2015 | 4 - 5.5 | SW8260B | SVOC | tert-Butyl ethyl ether | 1 UJ | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S003 | N | 10 Apr 2015 | 4 - 5.5 | SW8260B | VOC | 1,1,1,2-Tetrachloroethane | 1 UJ | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S003 | N | 10 Apr 2015 | 4 - 5.5 | SW8260B | VOC | 1,1,1-Trichloroethane | 1 UJ | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S003 | N | 10 Apr 2015 | 4 - 5.5 | SW8260B | VOC | 1,1,2,2-Tetrachloroethane | 1 UJ | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S003 | N | 10 Apr 2015 | 4 - 5.5 | SW8260B | VOC | 1,1,2-Trichloro-1,2,2-trifluoroethane | 2.1 UJ | 2.1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S003 | N | 10 Apr 2015 | 4 - 5.5 | SW8260B | VOC | 1,1,2-Trichloroethane | 1 UJ | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S003 | N | 10 Apr 2015 | 4 - 5.5 | SW8260B | VOC | 1,1-Dichloroethane | 1 UJ | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S003 | N | 10 Apr 2015 | 4 - 5.5 | SW8260B | VOC | 1,1-Dichloroethene | 1 UJ | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S003 | N | 10 Apr 2015 | 4 - 5.5 | SW8260B | VOC | 1,1-Dichloropropene | 1 UJ | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S003 | N | 10 Apr 2015 | 4 - 5.5 | SW8260B | VOC | 1,2,3-Trichlorobenzene | 2.1 UJ | 2.1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S003 | N | 10 Apr 2015 | 4 - 5.5 | SW8260B | VOC | 1,2,3-Trichloropropane | 2.1 UJ | 2.1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S003 | N | 10 Apr 2015 | 4 - 5.5 | SW8260B | VOC | 1,2,4-Trichlorobenzene | 2.1 UJ | 2.1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S003 | N | 10 Apr 2015 | 4 - 5.5 | SW8260B | VOC | 1,2,4-Trimethylbenzene | 1 UJ | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S003 | N | 10 Apr 2015 | 4 - 5.5 | SW8260B | VOC | 1,2-Dibromo-3-chloropropane | 2.1 UJ | 2.1 | 10 | 10 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S003 | N | 10 Apr 2015 | 4 - 5.5 | SW8260B | VOC | 1,2-Dibromoethane (EDB) | 1 UJ | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S003 | N | 10 Apr 2015 | 4 - 5.5 | SW8260B | VOC | 1,2-Dichlorobenzene | 1 UJ | 1 | 5.2 | 5 | µg/kg | | N |

APPENDIX E-2

**Analytical Data 2015 Biovent Sampling**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | SL | Units | Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1299 | BVBS1299S003 | N | 10 Apr 2015 | 4 - 5.5 | SW8260B | VOC | 1,2-Dichloroethane | 1 UJ | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S003 | N | 10 Apr 2015 | 4 - 5.5 | SW8260B | VOC | 1,2-Dichloropropane | 1 UJ | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S003 | N | 10 Apr 2015 | 4 - 5.5 | SW8260B | VOC | 1,3,5-Trimethylbenzene | 1 UJ | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S003 | N | 10 Apr 2015 | 4 - 5.5 | SW8260B | VOC | 1,3-Dichlorobenzene | 1 UJ | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S003 | N | 10 Apr 2015 | 4 - 5.5 | SW8260B | VOC | 1,3-Dichloropropane | 1 UJ | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S003 | N | 10 Apr 2015 | 4 - 5.5 | SW8260B | VOC | 1,4-Dichlorobenzene | 1 UJ | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S003 | N | 10 Apr 2015 | 4 - 5.5 | SW8260B | VOC | 2,2-Dichloropropane | 2.1 UJ | 2.1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S003 | N | 10 Apr 2015 | 4 - 5.5 | SW8260B | VOC | 2-Butanone (MEK) | 5.2 UJ | 5.2 | 21 | 20 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S003 | N | 10 Apr 2015 | 4 - 5.5 | SW8260B | VOC | 2-Chloro-1,1,1-trifluoroethane | 2.1 UJ | 2.1 | 10 | 10 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S003 | N | 10 Apr 2015 | 4 - 5.5 | SW8260B | VOC | 2-Chloroethyl vinyl ether | 2.1 UJ | 2.1 | 10 | 10 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S003 | N | 10 Apr 2015 | 4 - 5.5 | SW8260B | VOC | 2-Chlorotoluene | 1 UJ | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S003 | N | 10 Apr 2015 | 4 - 5.5 | SW8260B | VOC | 2-Hexanone | 5.2 UJ | 5.2 | 10 | 10 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S003 | N | 10 Apr 2015 | 4 - 5.5 | SW8260B | VOC | 4-Chlorotoluene | 1 UJ | 1 | 10 | 10 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S003 | N | 10 Apr 2015 | 4 - 5.5 | SW8260B | VOC | 4-Methyl-2-pentanone (MIBK) | 5.2 UJ | 5.2 | 10 | 10 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S003 | N | 10 Apr 2015 | 4 - 5.5 | SW8260B | VOC | Acetone | 21 J | 5.2 | 21 | 20 | µg/kg | X | Y |
| SO | BVBS1299 | BVBS1299S003 | N | 10 Apr 2015 | 4 - 5.5 | SW8260B | VOC | Benzene | 1 UJ | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S003 | N | 10 Apr 2015 | 4 - 5.5 | SW8260B | VOC | Bromobenzene | 1 UJ | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S003 | N | 10 Apr 2015 | 4 - 5.5 | SW8260B | VOC | Bromochloromethane | 1 UJ | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S003 | N | 10 Apr 2015 | 4 - 5.5 | SW8260B | VOC | Bromodichloromethane | 1 UJ | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S003 | N | 10 Apr 2015 | 4 - 5.5 | SW8260B | VOC | Bromoform | 2.1 UJ | 2.1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S003 | N | 10 Apr 2015 | 4 - 5.5 | SW8260B | VOC | Bromomethane | 2.1 UJ | 2.1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S003 | N | 10 Apr 2015 | 4 - 5.5 | SW8260B | VOC | Carbon tetrachloride | 1 UJ | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S003 | N | 10 Apr 2015 | 4 - 5.5 | SW8260B | VOC | Chlorobenzene | 1 UJ | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S003 | N | 10 Apr 2015 | 4 - 5.5 | SW8260B | VOC | Chloroethane | 2.1 UJ | 2.1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S003 | N | 10 Apr 2015 | 4 - 5.5 | SW8260B | VOC | Chloromethane | 2.1 UJ | 2.1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S003 | N | 10 Apr 2015 | 4 - 5.5 | SW8260B | VOC | Chlorotrifluoroethylene | 2.1 UJ | 2.1 | 10 | 10 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S003 | N | 10 Apr 2015 | 4 - 5.5 | SW8260B | VOC | cis-1,2-Dichloroethene | 1 UJ | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S003 | N | 10 Apr 2015 | 4 - 5.5 | SW8260B | VOC | cis-1,3-Dichloropropene | 1 UJ | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S003 | N | 10 Apr 2015 | 4 - 5.5 | SW8260B | VOC | Dibromochloromethane | 1 UJ | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S003 | N | 10 Apr 2015 | 4 - 5.5 | SW8260B | VOC | Dibromomethane | 1 UJ | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S003 | N | 10 Apr 2015 | 4 - 5.5 | SW8260B | VOC | Dichlorodifluoromethane | 2.1 UJ | 2.1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S003 | N | 10 Apr 2015 | 4 - 5.5 | SW8260B | VOC | Ethylbenzene | 1 UJ | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S003 | N | 10 Apr 2015 | 4 - 5.5 | SW8260B | VOC | Hexachlorobutadiene | 2.1 UJ | 2.1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S003 | N | 10 Apr 2015 | 4 - 5.5 | SW8260B | VOC | Isopropylbenzene | 1 UJ | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S003 | N | 10 Apr 2015 | 4 - 5.5 | SW8260B | VOC | m,p-Xylenes | 2.1 UJ | 2.1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S003 | N | 10 Apr 2015 | 4 - 5.5 | SW8260B | VOC | Methylene chloride | 2.1 UJ | 2.1 | 10 | 10 | µg/kg | | N |

APPENDIX E-2

**Analytical Data 2015 Biovent Sampling**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | SL | Units | Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1299 | BVBS1299S003 | N | 10 Apr 2015 | 4 - 5.5 | SW8260B | VOC | Methyl-tert-butyl Ether (MTBE) | 1 UJ | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S003 | N | 10 Apr 2015 | 4 - 5.5 | SW8260B | VOC | n-butylbenzene | 1 UJ | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S003 | N | 10 Apr 2015 | 4 - 5.5 | SW8260B | VOC | n-Propylbenzene | 1.4 J | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S003 | N | 10 Apr 2015 | 4 - 5.5 | SW8260B | VOC | o-Xylene | 1 UJ | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S003 | N | 10 Apr 2015 | 4 - 5.5 | SW8260B | VOC | p-Isopropyltoluene | 1 UJ | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S003 | N | 10 Apr 2015 | 4 - 5.5 | SW8260B | VOC | sec-Butylbenzene | 7 J | 1 | 5.2 | 5 | µg/kg | X | Y |
| SO | BVBS1299 | BVBS1299S003 | N | 10 Apr 2015 | 4 - 5.5 | SW8260B | VOC | Styrene | 1 UJ | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S003 | N | 10 Apr 2015 | 4 - 5.5 | SW8260B | VOC | tert-Butanol (TBA) | 10 UJ | 10 | 52 | | µg/kg | | NC |
| SO | BVBS1299 | BVBS1299S003 | N | 10 Apr 2015 | 4 - 5.5 | SW8260B | VOC | tert-Butylbenzene | 1 UJ | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S003 | N | 10 Apr 2015 | 4 - 5.5 | SW8260B | VOC | Tetrachloroethene | 1 UJ | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S003 | N | 10 Apr 2015 | 4 - 5.5 | SW8260B | VOC | Toluene | 1 UJ | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S003 | N | 10 Apr 2015 | 4 - 5.5 | SW8260B | VOC | trans-1,2-Dichloroethene | 1 UJ | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S003 | N | 10 Apr 2015 | 4 - 5.5 | SW8260B | VOC | trans-1,3-Dichloropropene | 1 UJ | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S003 | N | 10 Apr 2015 | 4 - 5.5 | SW8260B | VOC | Trichloroethene | 1 UJ | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S003 | N | 10 Apr 2015 | 4 - 5.5 | SW8260B | VOC | Trichlorofluoromethane | 2.1 UJ | 2.1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S003 | N | 10 Apr 2015 | 4 - 5.5 | SW8260B | VOC | Trichloromethane (Chloroform) | 1 UJ | 1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S003 | N | 10 Apr 2015 | 4 - 5.5 | SW8260B | VOC | Vinyl chloride | 2.1 UJ | 2.1 | 5.2 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S004 | N | 10 Apr 2015 | 7 - 8 | SW9045D | GENCHEM | pH | 7.95 = | | | | pH units | | NC |
| SO | BVBS1299 | BVBS1299S004 | N | 10 Apr 2015 | 7 - 8 | M8015D | HC | Diesel Range Organics (C12-C14) | 5300 U | 2700 | 5300 | 5000 | µg/kg | X | N |
| SO | BVBS1299 | BVBS1299S004 | N | 10 Apr 2015 | 7 - 8 | M8015D | HC | Diesel Range Organics (C15-C20) | 5300 U | 2700 | 5300 | 5000 | µg/kg | X | N |
| SO | BVBS1299 | BVBS1299S004 | N | 10 Apr 2015 | 7 - 8 | M8015D | HC | Diesel Range Organics (C21-C30) | 5300 U | 2700 | 5300 | 5000 | µg/kg | X | N |
| SO | BVBS1299 | BVBS1299S004 | N | 10 Apr 2015 | 7 - 8 | M8015D | HC | Diesel Range Organics (C8-C11) | 5300 U | 2700 | 5300 | 1000 | µg/kg | X | RL |
| SO | BVBS1299 | BVBS1299S004 | N | 10 Apr 2015 | 7 - 8 | SW8015B | HC | GRO (C4-C12) | 970 U | 490 | 970 | 1000 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S004 | N | 10 Apr 2015 | 7 - 8 | M8015D | HC | ORO (C31-C40) | 11000 U | 5300 | 11000 | 10000 | µg/kg | X | N |
| SO | BVBS1299 | BVBS1299S004 | N | 10 Apr 2015 | 7 - 8 | M8015D | HC | TOTAL EFH(C8-C40) | 5300 U | 2700 | 5300 | 10000 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S004 | N | 10 Apr 2015 | 7 - 8 | SW8270C-SIM | PAH | 1-Methylnaphthalene | 11 U | 5.3 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1299 | BVBS1299S004 | N | 10 Apr 2015 | 7 - 8 | SW8270C-SIM | PAH | 2-Methylnaphthalene | 11 U | 5.3 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1299 | BVBS1299S004 | N | 10 Apr 2015 | 7 - 8 | SW8270C-SIM | PAH | Acenaphthene | 11 U | 5.3 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1299 | BVBS1299S004 | N | 10 Apr 2015 | 7 - 8 | SW8270C-SIM | PAH | Acenaphthylene | 11 U | 5.3 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1299 | BVBS1299S004 | N | 10 Apr 2015 | 7 - 8 | SW8270C-SIM | PAH | Anthracene | 11 U | 5.3 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1299 | BVBS1299S004 | N | 10 Apr 2015 | 7 - 8 | SW8270C-SIM | PAH | Benzo(a)anthracene | 11 U | 5.3 | 11 | | µg/kg | | NC |
| SO | BVBS1299 | BVBS1299S004 | N | 10 Apr 2015 | 7 - 8 | SW8270C-SIM | PAH | Benzo(a)pyrene | 11 U | 5.3 | 11 | | µg/kg | | NC |
| SO | BVBS1299 | BVBS1299S004 | N | 10 Apr 2015 | 7 - 8 | SW8270C-SIM | PAH | Benzo(b)fluoranthene | 11 U | 5.3 | 11 | | µg/kg | | NC |
| SO | BVBS1299 | BVBS1299S004 | N | 10 Apr 2015 | 7 - 8 | SW8270C-SIM | PAH | Benzo(ghi)perylene | 11 U | 5.3 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1299 | BVBS1299S004 | N | 10 Apr 2015 | 7 - 8 | SW8270C-SIM | PAH | Benzo(k)fluoranthene | 11 U | 5.3 | 11 | | µg/kg | | NC |
| SO | BVBS1299 | BVBS1299S004 | N | 10 Apr 2015 | 7 - 8 | SW8270C-SIM | PAH | Chrysene | 11 U | 5.3 | 11 | | µg/kg | | NC |

APPENDIX E-2

**Analytical Data 2015 Biovent Sampling**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | SL | Units | Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1299 | BVBS1299S004 | N | 10 Apr 2015 | 7 - 8 | SW8270C-SIM | PAH | Dibenzo(a,h)anthracene | 11 U | 5.3 | 11 | | µg/kg | | NC |
| SO | BVBS1299 | BVBS1299S004 | N | 10 Apr 2015 | 7 - 8 | SW8270C-SIM | PAH | Fluoranthene | 11 U | 5.3 | 11 | 5.2 | µg/kg | X | RL |
| SO | BVBS1299 | BVBS1299S004 | N | 10 Apr 2015 | 7 - 8 | SW8270C-SIM | PAH | Fluorene | 11 U | 5.3 | 11 | 3.8 | µg/kg | X | RL |
| SO | BVBS1299 | BVBS1299S004 | N | 10 Apr 2015 | 7 - 8 | SW8270C-SIM | PAH | Indeno(1,2,3-cd)pyrene | 11 U | 5.3 | 11 | | µg/kg | | NC |
| SO | BVBS1299 | BVBS1299S004 | N | 10 Apr 2015 | 7 - 8 | SW8270C-SIM | PAH | Naphthalene | 11 U | 5.3 | 11 | 3.6 | µg/kg | X | RL |
| SO | BVBS1299 | BVBS1299S004 | N | 10 Apr 2015 | 7 - 8 | SW8270C-SIM | PAH | PAHTEQM | 0 U | | | 4.47 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S004 | N | 10 Apr 2015 | 7 - 8 | SW8270C-SIM | PAH | Phenanthrene | 11 U | 5.3 | 11 | 3.9 | µg/kg | X | RL |
| SO | BVBS1299 | BVBS1299S004 | N | 10 Apr 2015 | 7 - 8 | SW8270C-SIM | PAH | Pyrene | 11 U | 5.3 | 11 | 5.6 | µg/kg | X | N |
| SO | BVBS1299 | BVBS1299S004 | N | 10 Apr 2015 | 7 - 8 | SW8270C-SIM | PHTH | Bis(2-ethylhexyl)phthalate | 21 U | 11 | 21 | 61 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S004 | N | 10 Apr 2015 | 7 - 8 | SW8270C-SIM | PHTH | Butyl benzyl phthalate | 21 U | 11 | 21 | 100 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S004 | N | 10 Apr 2015 | 7 - 8 | SW8270C-SIM | PHTH | Diethyl phthalate | 21 U | 11 | 21 | 27 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S004 | N | 10 Apr 2015 | 7 - 8 | SW8270C-SIM | PHTH | Dimethyl phthalate | 21 U | 11 | 21 | 27 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S004 | N | 10 Apr 2015 | 7 - 8 | SW8270C-SIM | PHTH | Di-n-butyl phthalate | 21 U | 11 | 21 | 27 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S004 | N | 10 Apr 2015 | 7 - 8 | SW8270C-SIM | PHTH | Di-n-octyl phthalate | 21 U | 11 | 21 | 27 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S004 | N | 10 Apr 2015 | 7 - 8 | SW8260B | SVOC | Diisopropyl ether | 0.97 U | 0.97 | 9.7 | 10 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S004 | N | 10 Apr 2015 | 7 - 8 | SW8270C-SIM | SVOC | n-Nitrosodimethylamine | 21 U | 11 | 21 | 10 | µg/kg | X | RL |
| SO | BVBS1299 | BVBS1299S004 | N | 10 Apr 2015 | 7 - 8 | SW8260B | SVOC | tert-Amyl methyl ether | 0.97 U | 0.97 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S004 | N | 10 Apr 2015 | 7 - 8 | SW8260B | SVOC | tert-Butyl ethyl ether | 0.97 U | 0.97 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S004 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | 1,1,1,2-Tetrachloroethane | 0.97 U | 0.97 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S004 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | 1,1,1-Trichloroethane | 0.97 U | 0.97 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S004 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | 1,1,2,2-Tetrachloroethane | 0.97 U | 0.97 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S004 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | 1,1,2-Trichloro-1,2,2-trifluoroethane | 1.9 U | 1.9 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S004 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | 1,1,2-Trichloroethane | 0.97 U | 0.97 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S004 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | 1,1-Dichloroethane | 0.97 U | 0.97 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S004 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | 1,1-Dichloroethene | 0.97 U | 0.97 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S004 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | 1,1-Dichloropropene | 0.97 U | 0.97 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S004 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | 1,2,3-Trichlorobenzene | 1.9 U | 1.9 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S004 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | 1,2,3-Trichloropropane | 1.9 U | 1.9 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S004 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | 1,2,4-Trichlorobenzene | 1.9 U | 1.9 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S004 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | 1,2,4-Trimethylbenzene | 0.97 U | 0.97 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S004 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | 1,2-Dibromo-3-chloropropane | 1.9 U | 1.9 | 9.7 | 10 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S004 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | 1,2-Dibromoethane (EDB) | 0.97 U | 0.97 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S004 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | 1,2-Dichlorobenzene | 0.97 U | 0.97 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S004 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | 1,2-Dichloroethane | 0.97 U | 0.97 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S004 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | 1,2-Dichloropropane | 0.97 U | 0.97 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S004 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | 1,3,5-Trimethylbenzene | 0.97 U | 0.97 | 4.9 | 5 | µg/kg | | N |

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**Analytical Data 2015 Biovent Sampling**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | SL | Units | Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1299 | BVBS1299S004 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | 1,3-Dichlorobenzene | 0.97 U | 0.97 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S004 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | 1,3-Dichloropropane | 0.97 U | 0.97 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S004 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | 1,4-Dichlorobenzene | 0.97 U | 0.97 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S004 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | 2,2-Dichloropropane | 1.9 U | 1.9 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S004 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | 2-Butanone (MEK) | 4.9 U | 4.9 | 19 | 20 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S004 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | 2-Chloro-1,1,1-trifluoroethane | 1.9 U | 1.9 | 9.7 | 10 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S004 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | 2-Chloroethyl vinyl ether | 1.9 U | 1.9 | 9.7 | 10 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S004 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | 2-Chlorotoluene | 0.97 U | 0.97 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S004 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | 2-Hexanone | 4.9 U | 4.9 | 9.7 | 10 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S004 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | 4-Chlorotoluene | 0.97 U | 0.97 | 9.7 | 10 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S004 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | 4-Methyl-2-pentanone (MIBK) | 4.9 U | 4.9 | 9.7 | 10 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S004 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | Acetone | 4.9 U | 4.9 | 19 | 20 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S004 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | Benzene | 0.97 U | 0.97 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S004 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | Bromobenzene | 0.97 U | 0.97 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S004 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | Bromochloromethane | 0.97 U | 0.97 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S004 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | Bromodichloromethane | 0.97 U | 0.97 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S004 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | Bromoform | 1.9 U | 1.9 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S004 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | Bromomethane | 1.9 U | 1.9 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S004 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | Carbon tetrachloride | 0.97 U | 0.97 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S004 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | Chlorobenzene | 0.97 U | 0.97 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S004 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | Chloroethane | 1.9 U | 1.9 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S004 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | Chloromethane | 1.9 U | 1.9 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S004 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | Chlorotrifluoroethylene | 1.9 U | 1.9 | 9.7 | 10 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S004 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | cis-1,2-Dichloroethene | 0.97 U | 0.97 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S004 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | cis-1,3-Dichloropropene | 0.97 U | 0.97 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S004 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | Dibromochloromethane | 0.97 U | 0.97 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S004 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | Dibromomethane | 0.97 U | 0.97 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S004 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | Dichlorodifluoromethane | 1.9 U | 1.9 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S004 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | Ethylbenzene | 0.97 U | 0.97 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S004 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | Hexachlorobutadiene | 1.9 U | 1.9 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S004 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | Isopropylbenzene | 0.97 U | 0.97 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S004 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | m,p-Xylenes | 1.9 U | 1.9 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S004 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | Methylene chloride | 1.9 U | 1.9 | 9.7 | 10 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S004 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | Methyl-tert-butyl Ether (MTBE) | 0.97 U | 0.97 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S004 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | n-butylbenzene | 0.97 U | 0.97 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S004 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | n-Propylbenzene | 0.97 U | 0.97 | 4.9 | 5 | µg/kg | | N |

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**Analytical Data 2015 Biovent Sampling**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | SL | Units | Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1299 | BVBS1299S004 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | o-Xylene | 0.97 U | 0.97 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S004 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | p-Isopropyltoluene | 0.97 U | 0.97 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S004 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | sec-Butylbenzene | 0.97 U | 0.97 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S004 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | Styrene | 0.97 U | 0.97 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S004 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | tert-Butanol (TBA) | 9.7 U | 9.7 | 49 | | µg/kg | | NC |
| SO | BVBS1299 | BVBS1299S004 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | tert-Butylbenzene | 0.97 U | 0.97 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S004 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | Tetrachloroethene | 0.97 U | 0.97 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S004 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | Toluene | 0.97 U | 0.97 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S004 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | trans-1,2-Dichloroethene | 0.97 U | 0.97 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S004 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | trans-1,3-Dichloropropene | 0.97 U | 0.97 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S004 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | Trichloroethene | 0.97 U | 0.97 | 4.9 | 5 | µg/kg | | N |

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**Analytical Data 2015 Biovent Sampling**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | SL | Units | Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1299 | BVBS1299S004 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | Trichlorofluoromethane | 1.9 U | 1.9 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S004 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | Trichloromethane (Chloroform) | 0.97 U | 0.97 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S004 | N | 10 Apr 2015 | 7 - 8 | SW8260B | VOC | Vinyl chloride | 1.9 U | 1.9 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1015R | BVBS1015RS002 | N | 20 Nov 2014 | 4.5 - 5 | SW8015B | HC | Diesel Range Organics (C12-C14) | 6500000 = | 29000 | 58000 | 5000 | ug/kg | | |
| SO | BVBS1015R | BVBS1015RS002 | N | 20 Nov 2014 | 4.5 - 5 | SW8015B | HC | Diesel Range Organics (C15-C20) | 4100000 = | 29000 | 58000 | 5000 | ug/kg | | |
| SO | BVBS1015R | BVBS1015RS002 | N | 20 Nov 2014 | 4.5 - 5 | SW8015B | HC | Diesel Range Organics (C21-C30) | 120000 = | 29000 | 58000 | 5000 | ug/kg | | |
| SO | BVBS1015R | BVBS1015RS002 | N | 20 Nov 2014 | 4.5 - 5 | SW8015B | HC | Diesel Range Organics (C8-C11) | 1800000 = | 29000 | 58000 | 1000 | ug/kg | | |
| SO | BVBS1015R | BVBS1015RS002 | N | 20 Nov 2014 | 4.5 - 5 | SW8015B | HC | ORO (C31-C40) | 120000 U | 58000 | 1E+05 | 10000 | ug/kg | | |
| SO | BVBS1015R | BVBS1015RS002 | N | 20 Nov 2014 | 4.5 - 5 | SW8015B | HC | TOTAL EFH(C8-C40) | 12000000 = | 29000 | 58000 | 10000 | ug/kg | | |
| SO | BVBS1015R | BVBS1015RS003 | N | 20 Nov 2014 | 7.5 - 8 | SW8015B | HC | Diesel Range Organics (C12-C14) | 64000 = | 2700 | 5400 | 5000 | ug/kg | | |
| SO | BVBS1015R | BVBS1015RS003 | N | 20 Nov 2014 | 7.5 - 8 | SW8015B | HC | Diesel Range Organics (C15-C20) | 90000 = | 2700 | 5400 | 5000 | ug/kg | | |
| SO | BVBS1015R | BVBS1015RS003 | N | 20 Nov 2014 | 7.5 - 8 | SW8015B | HC | Diesel Range Organics (C21-C30) | 4600 J | 2700 | 5400 | 5000 | ug/kg | | |
| SO | BVBS1015R | BVBS1015RS003 | N | 20 Nov 2014 | 7.5 - 8 | SW8015B | HC | Diesel Range Organics (C8-C11) | 6800 = | 2700 | 5400 | 1000 | ug/kg | | |
| SO | BVBS1015R | BVBS1015RS003 | N | 20 Nov 2014 | 7.5 - 8 | SW8015B | HC | ORO (C31-C40) | 5600 J | 5400 | 11000 | 10000 | ug/kg | | |
| SO | BVBS1015R | BVBS1015RS003 | N | 20 Nov 2014 | 7.5 - 8 | SW8015B | HC | TOTAL EFH(C8-C40) | 170000 = | 2700 | 5400 | 10000 | ug/kg | | |

**Notes:**

FD - field duplicate sample
FS - field split sample
N - normal sample
NC - no criteria
pH - pH standard units
GS - soil gas sample
SO - subsurface soil sample
µg/kg - micrograms per kilogram
µg/m3 - micrograms per cubic meter
mg/kg - milligrams per kilograms

**Class Abbreviations:**

| | |
|---|---|
| GENCHEM | general chemistry |
| HC | hydrocarbons |
| PAH | polycyclic aromatic hydrocarbons |
| PHTH | phthalates |
| SVOC | semi-volatile organic compound |
| VOC | volatile organic compound |

**Validation Flags**

| | |
|---|---|
| J | Analyte is present but the reported quantitation is estimated. |
| U | Analyte was not detected at the specified detection limit. |
| UJ | Estimated detection limit. The result is estimated and may be a false negative due to related QC problems. |
| = | Reported quantitation represents the most accurate concentration for the given analyte. |

**APPENDIX E-3**

Bravo Skim Pond - Bioventing/ISCO Treatability Study: Biovent System On/Off Schedule

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Status | Date | Time | Running Time (Hours:Minutes) |
|---|---|---|---|
| Start | 2/6/2015 | 12:59 | |
| off | 2/6/2015 | 17:30 | 4:31 |
| on | 2/9/2015 | 8:00 | |
| off | 2/13/2015 | 7:00 | 95:00:00 |
| on | 2/16/2015 | 7:30 | |
| off | 2/27/2015 | 15:10 | 271:40:00 |
| on | 3/6/2015 | 9:30 | |
| off | 3/6/2015 | 15:10 | 5:40 |
| on | 3/9/2015 | 8:30 | |
| off | 3/13/2015 | 10:05 | 97:35:00 |
| on | 3/16/2015 | 9:15 | |
| off | 3/20/2015 | 10:50 | 97:35:00 |
| on | 3/23/2015 | 9:10 | |
| End | 3/26/2015 | 10:15 | 73:05:00 |

APPENDIX E-4

**Project Operations Summary**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Description | Date | *Sampling Events* | | | Totals | Units |
|---|---|---|---|---|---|---|
| | | Baseline | Mid-point | Final | | |
| Beginning of Biovent Operations | 8/20/2014 | | | | | |
| Termination of Biovent Operations | 9/9/2014 | | | | | |
| Soil Samples Collected | | 7/14,16/2014 | - | 9/11/2014 | | |
| Soil Gas Samples Collected | | 8/18/2014 | - | 9/11/2014 | | |
| Duration of Bioventing TS | | | | | 2.9 | weeks |
| Average Air Flow | | | | | 17.3 | scfm |
| Total Air Injected | | | | | 242,000 | cubic feet |
| Duration of Air Injection | | | | | 233.8 | hours |

*Project Operations Summary, Bravo Skim Pond Biovent Test*

| Description | Date | *Sampling Events* | | | Totals | Units |
|---|---|---|---|---|---|---|
| | | Baseline | Mid-point | Final | | |
| Beginning of Biovent Operations | 2/6/2015 | | | | | |
| Termination of Biovent Operations | 3/26/2015 | | | | | |
| Soil Samples Collected | | 2/4/2015 | 3/3/2015 | 4/10/2015 | | |
| Soil Gas Samples Collected | | 2/6/2015 | - | 4/13/2015 | | |
| Duration of Bioventing TS | | | | | 6.9 | weeks |
| Average Air Flow | | | | | 21.3 | scfm |
| Total Air Injected | | | | | 826,281 | cubic feet |
| Duration of Air Injection | | | | | 645.1 | hours |

Note:

SCFM - standard cubic feet per minute

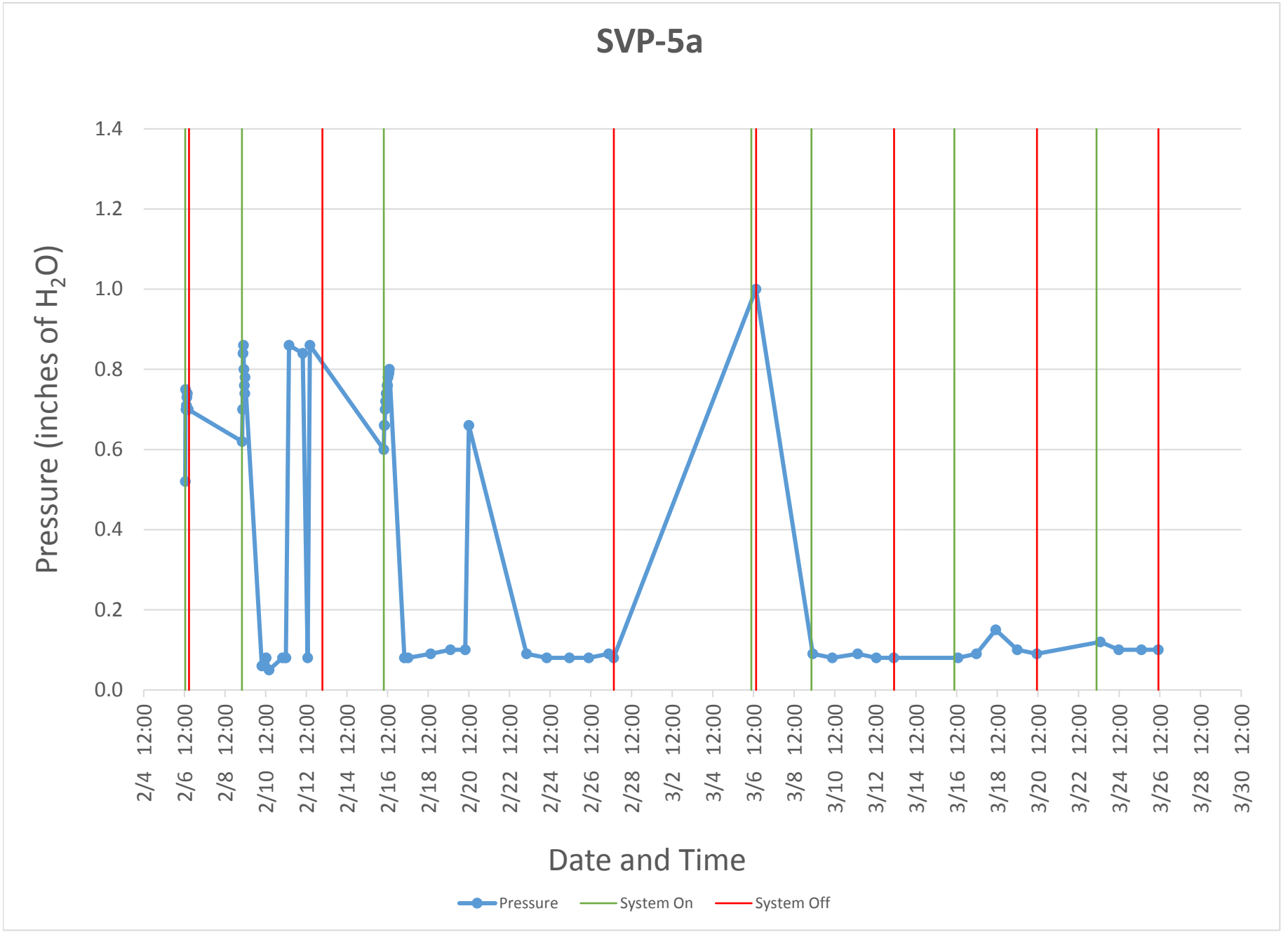
**Biovent Time Series Graphs - Bravo Skim Pond, 2015**
NASA SSFL, Ventura County, California

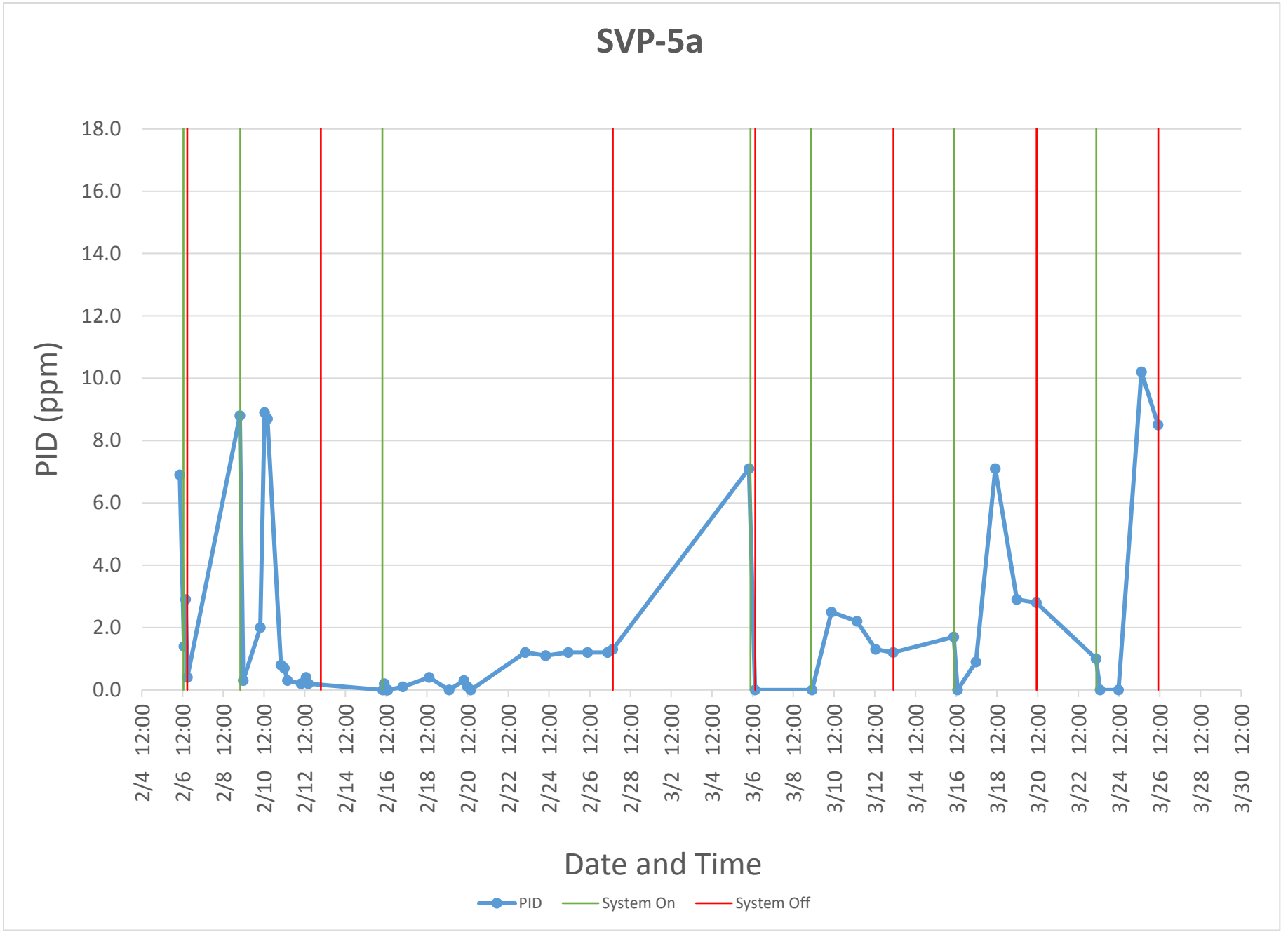
***Soil Vapor Probes (SVPs) Illustrated on these Graphs:***

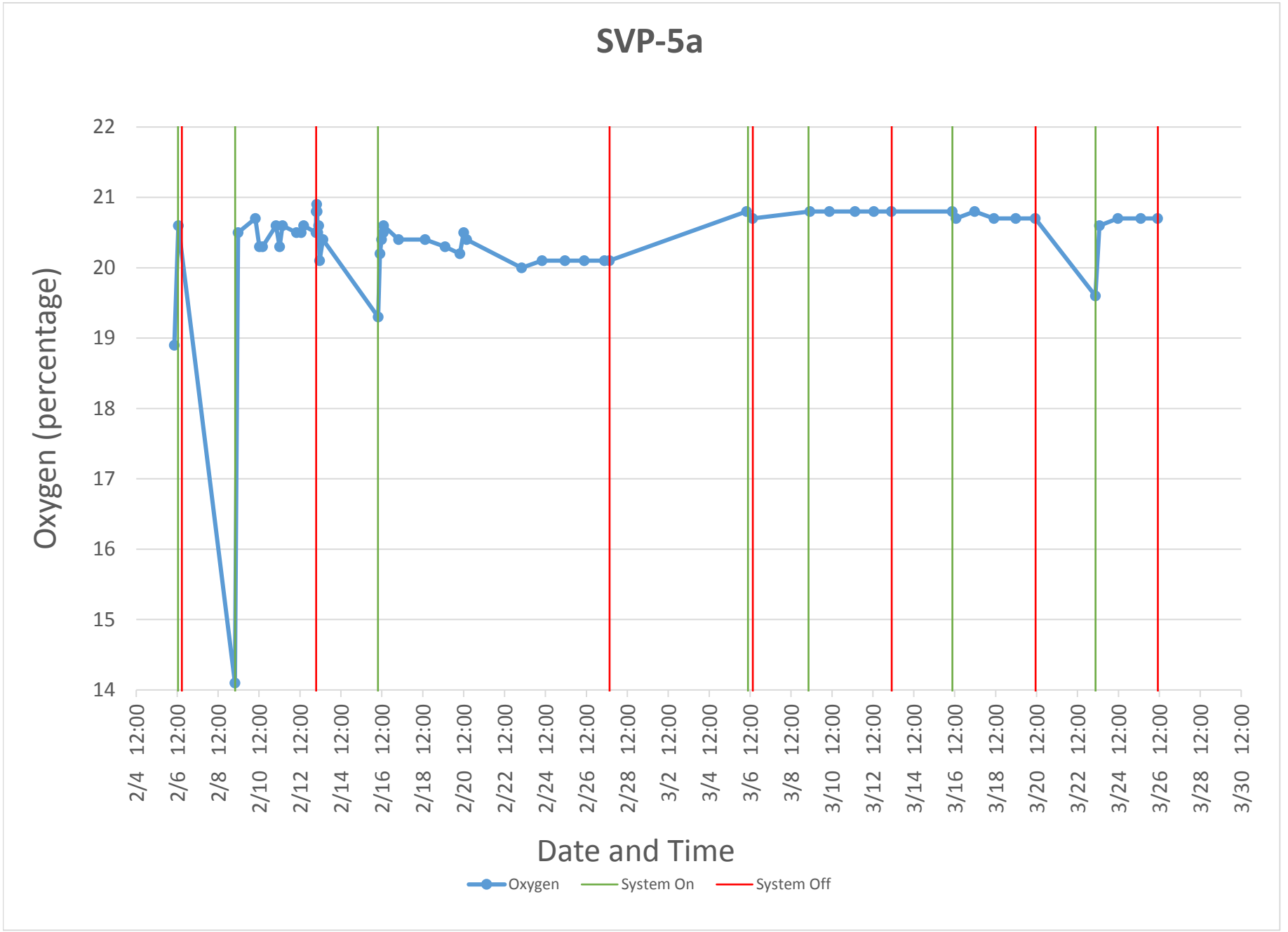
SVP-5a
SVP-6a
SVP-6b
SVP-7a

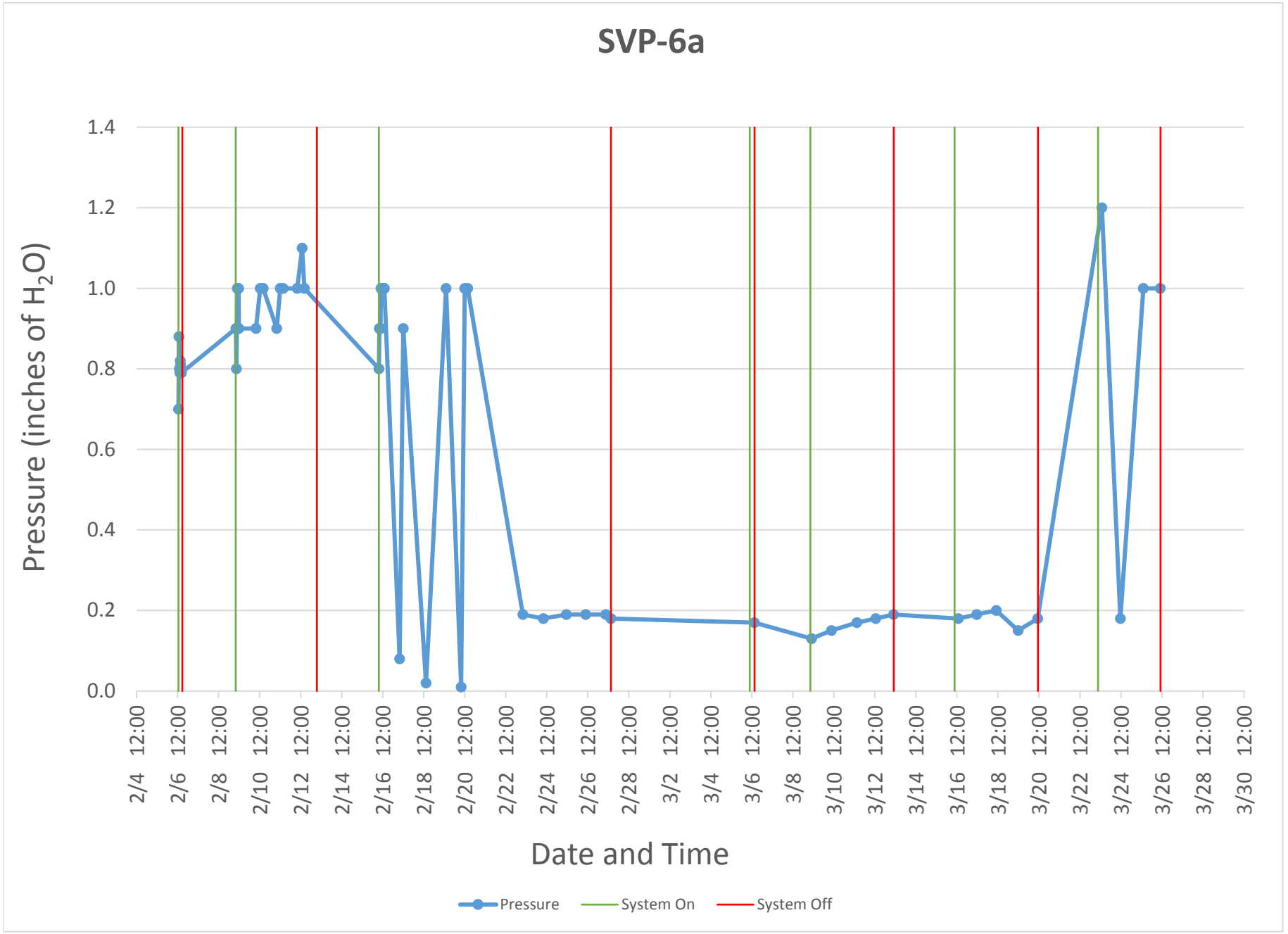
***Summary***

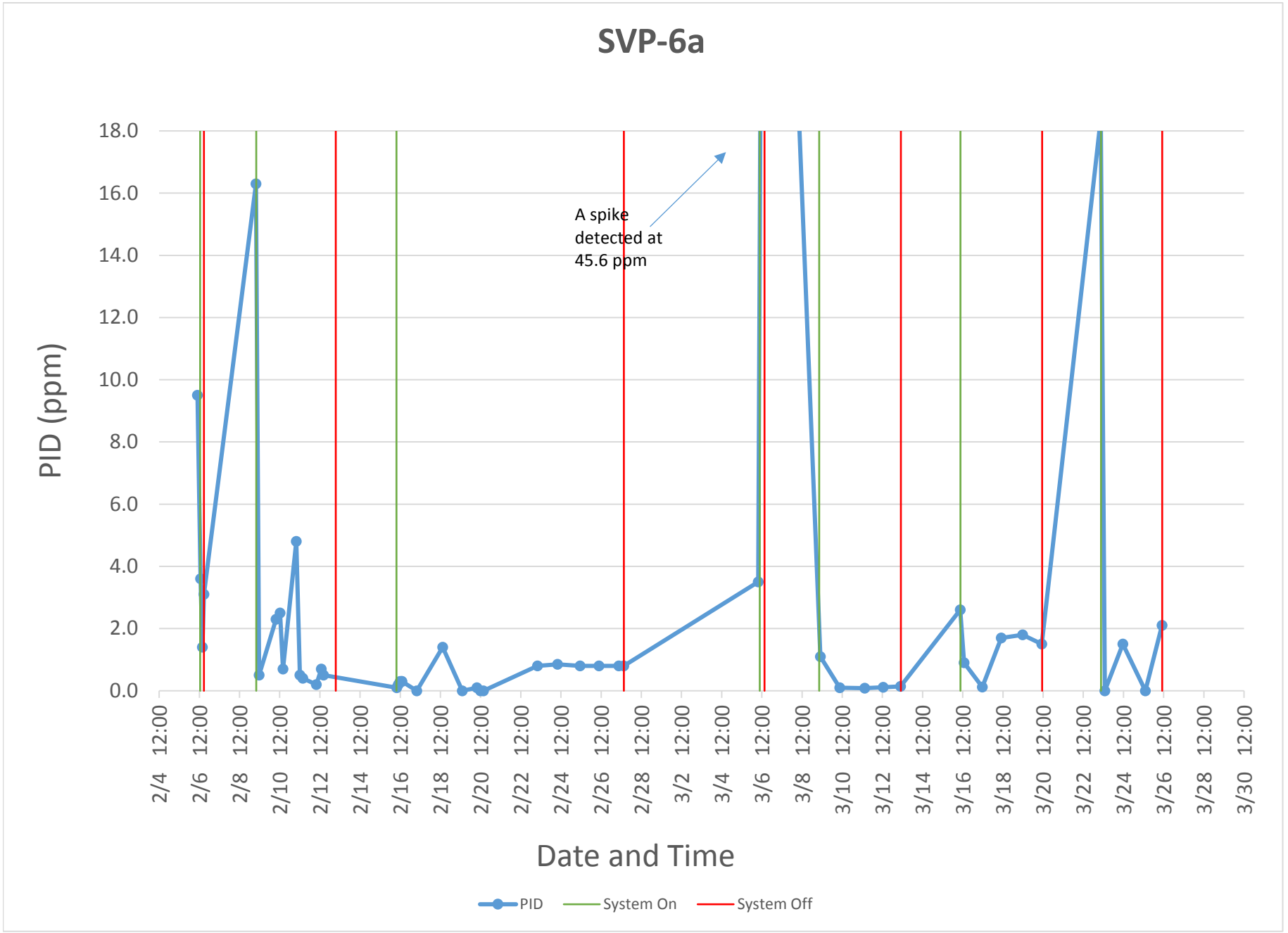
Four SVPs were monitored during bioventing operations at the Bravo Skim Pond pilot study site, conducted in 2015. Parameters were collected at each of the SVPs listed above during bioventing operations. These parameters (oxygen concentration, pressure, and photoionization detector [PID] - used to measure volatile organic compounds [VOCs]) are illustrated below on graphs to observe changes over time at each location relative to the bioventing injection well.

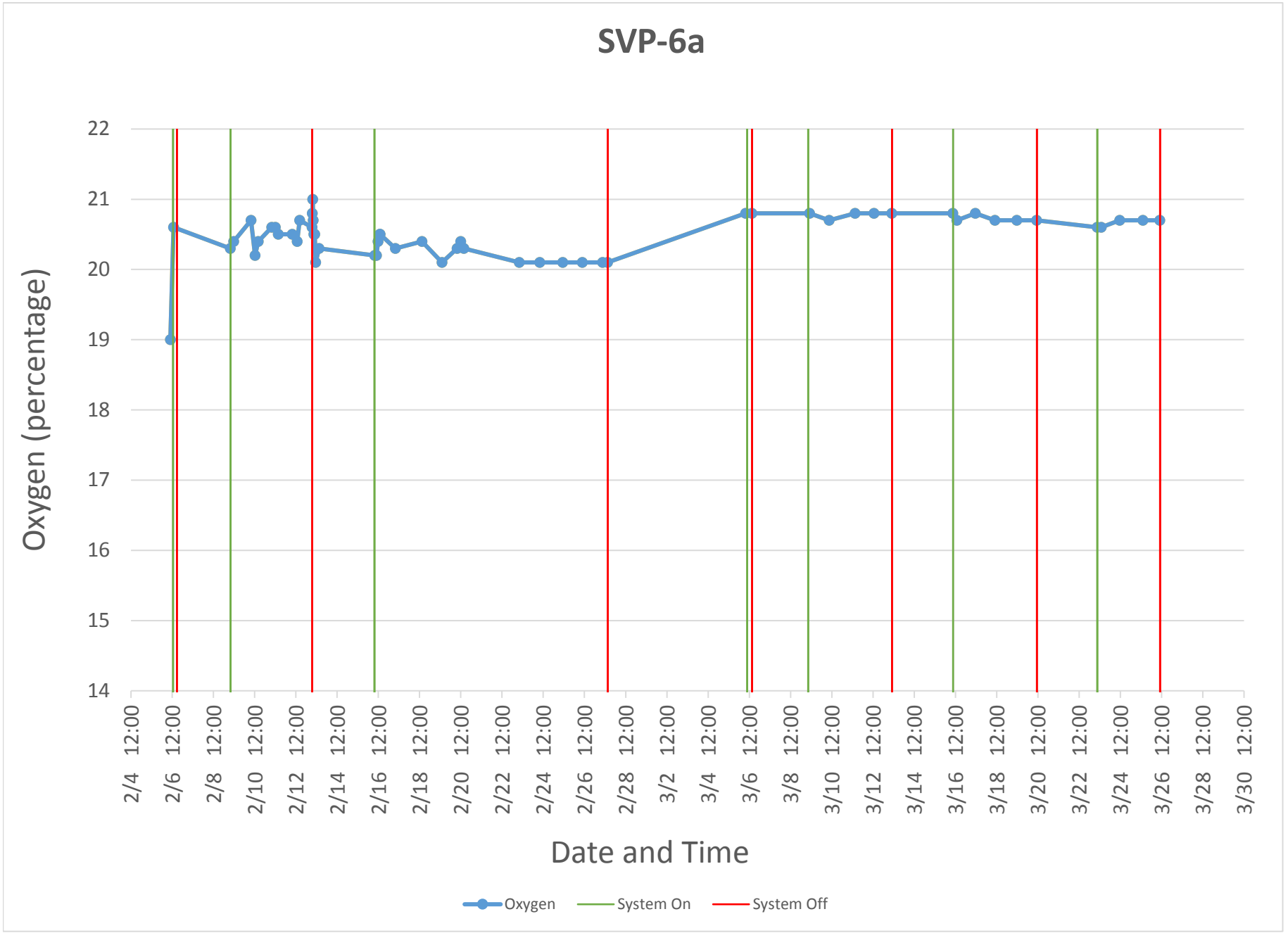

SVP-5a
Pressure (inches of $H_2O$)
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
2/4 12:00
2/6 12:00
2/8 12:00
2/10 12:00
2/12 12:00
2/14 12:00
2/16 12:00
2/18 12:00
2/20 12:00
2/22 12:00
2/24 12:00
2/26 12:00
2/28 12:00
3/2 12:00
3/4 12:00
3/6 12:00
3/8 12:00
3/10 12:00
3/12 12:00
3/14 12:00
3/16 12:00
3/18 12:00
3/20 12:00
3/22 12:00
3/24 12:00
3/26 12:00
3/28 12:00
3/30 12:00
Date and Time
Pressure
System On
System Off

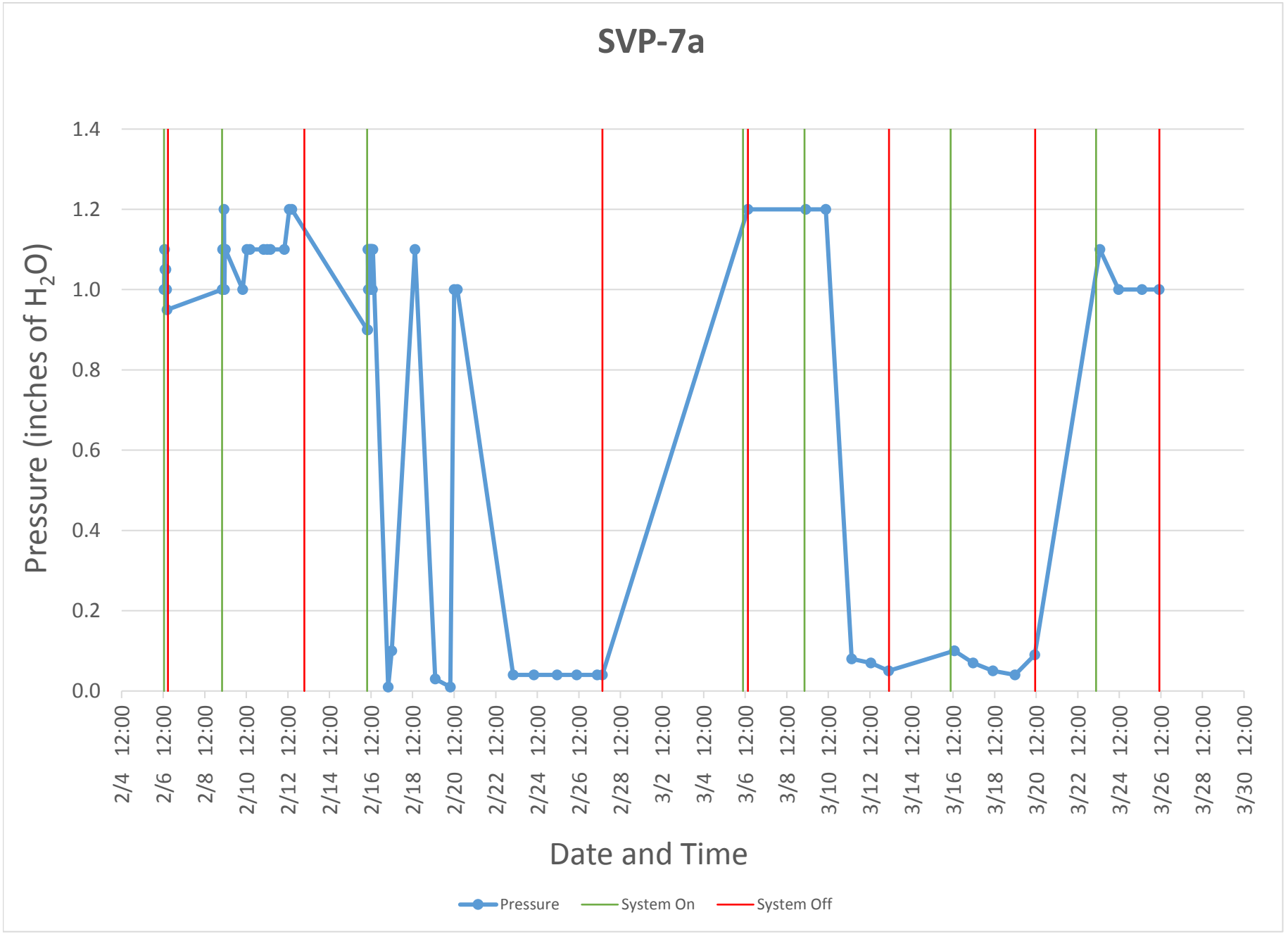

SVP-5a
PID (ppm)
18.0
16.0
14.0
12.0
10.0
8.0
6.0
4.0
2.0
0.0
2/4 12:00
2/6 12:00
2/8 12:00
2/10 12:00
2/12 12:00
2/14 12:00
2/16 12:00
2/18 12:00
2/20 12:00
2/22 12:00
2/24 12:00
2/26 12:00
2/28 12:00
3/2 12:00
3/4 12:00
3/6 12:00
3/8 12:00
3/10 12:00
3/12 12:00
3/14 12:00
3/16 12:00
3/18 12:00
3/20 12:00
3/22 12:00
3/24 12:00
3/26 12:00
3/28 12:00
3/30 12:00
Date and Time
PID
System On
System Off

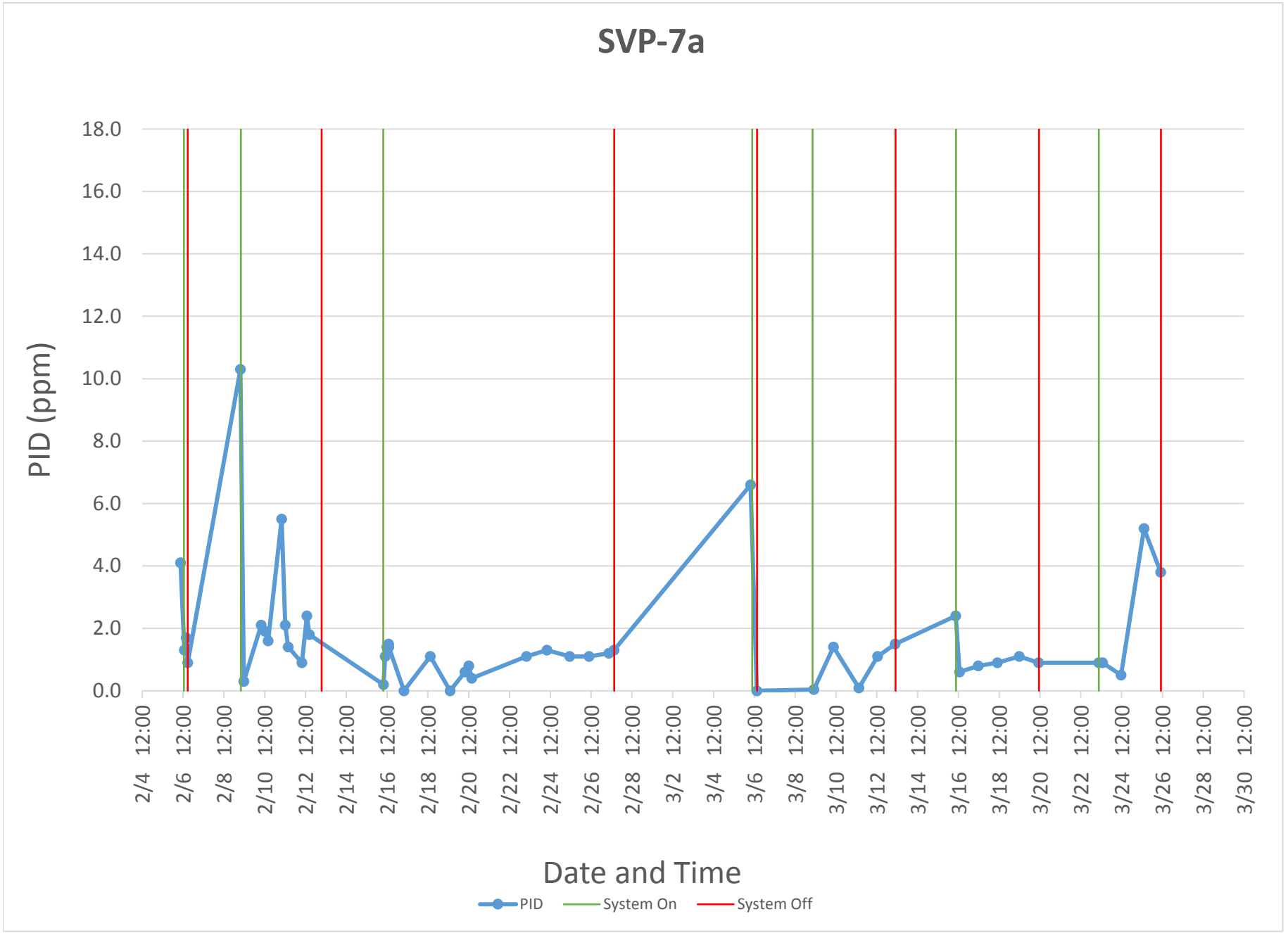

SVP-5a
Oxygen (percentage)
22
21
20
19
18
17
16
15
14
2/4 12:00
2/6 12:00
2/8 12:00
2/10 12:00
2/12 12:00
2/14 12:00
2/16 12:00
2/18 12:00
2/20 12:00
2/22 12:00
2/24 12:00
2/26 12:00
2/28 12:00
3/2 12:00
3/4 12:00
3/6 12:00
3/8 12:00
3/10 12:00
3/12 12:00
3/14 12:00
3/16 12:00
3/18 12:00
3/20 12:00
3/22 12:00
3/24 12:00
3/26 12:00
3/28 12:00
3/30 12:00
Date and Time
Oxygen
System On
System Off

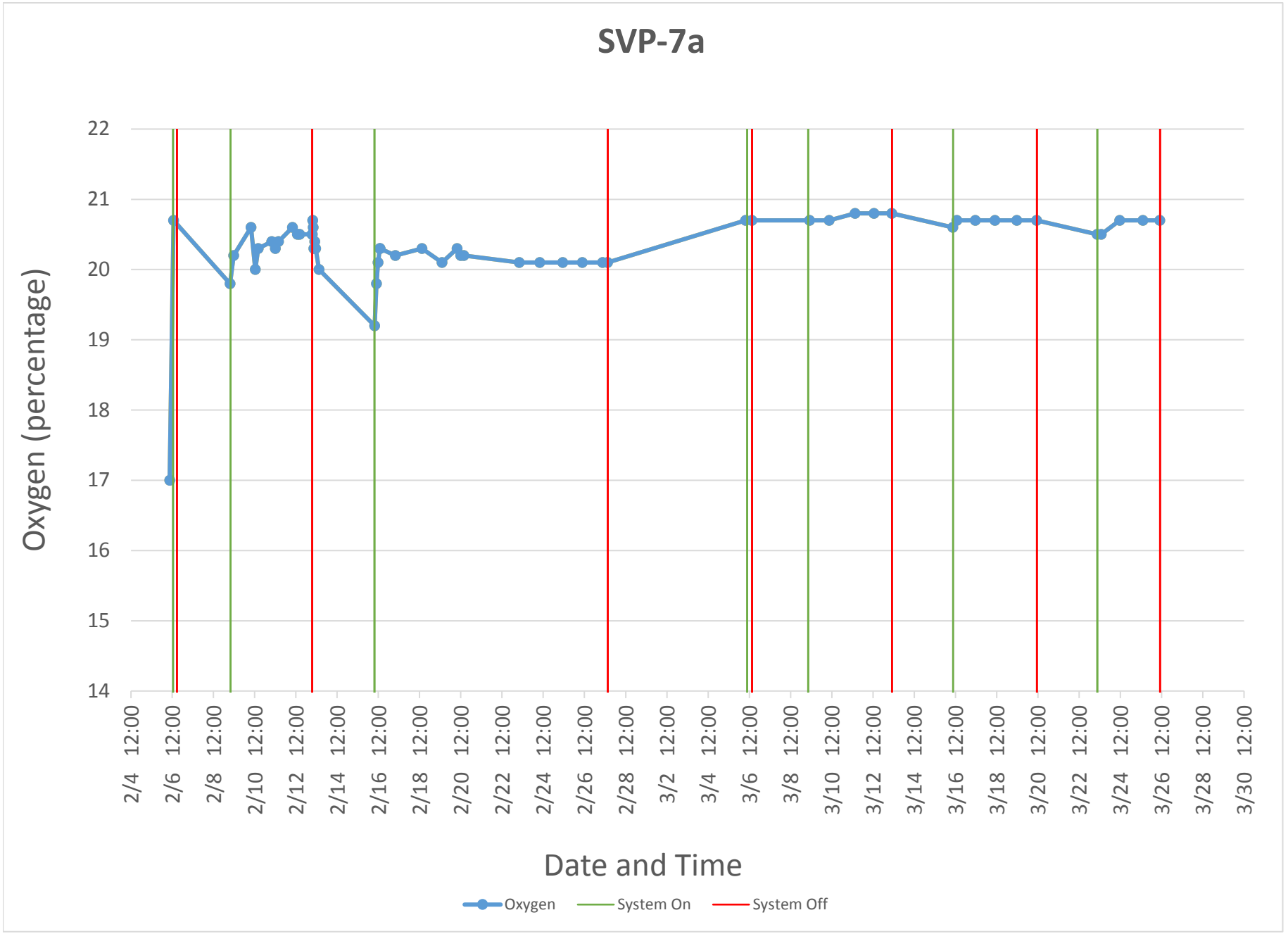

SVP-6a
Pressure (inches of $H_2O$)
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
2/4 12:00
2/6 12:00
2/8 12:00
2/10 12:00
2/12 12:00
2/14 12:00
2/16 12:00
2/18 12:00
2/20 12:00
2/22 12:00
2/24 12:00
2/26 12:00
2/28 12:00
3/2 12:00
3/4 12:00
3/6 12:00
3/8 12:00
3/10 12:00
3/12 12:00
3/14 12:00
3/16 12:00
3/18 12:00
3/20 12:00
3/22 12:00
3/24 12:00
3/26 12:00
3/28 12:00
3/30 12:00
Date and Time
Pressure
System On
System Off

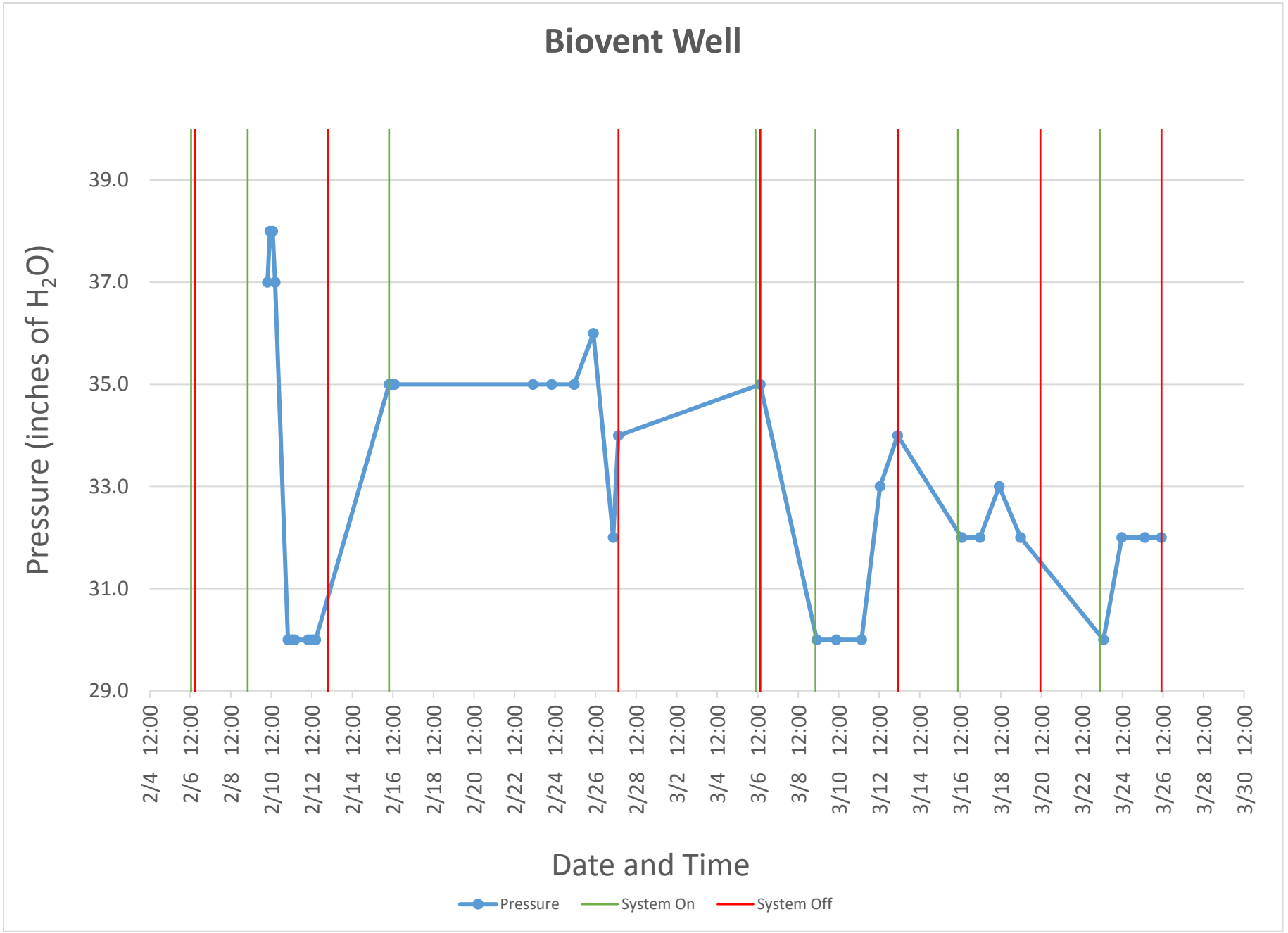

SVP-6a
PID (ppm)
18.0
16.0
14.0
12.0
10.0
8.0
6.0
4.0
2.0
0.0
A spike detected at 45.6 ppm
2/4 12:00
2/6 12:00
2/8 12:00
2/10 12:00
2/12 12:00
2/14 12:00
2/16 12:00
2/18 12:00
2/20 12:00
2/22 12:00
2/24 12:00
2/26 12:00
2/28 12:00
3/2 12:00
3/4 12:00
3/6 12:00
3/8 12:00
3/10 12:00
3/12 12:00
3/14 12:00
3/16 12:00
3/18 12:00
3/20 12:00
3/22 12:00
3/24 12:00
3/26 12:00
3/28 12:00
3/30 12:00
Date and Time
PID
System On
System Off


SVP-6a
Oxygen (percentage)
22
21
20
19
18
17
16
15
14
2/4 12:00
2/6 12:00
2/8 12:00
2/10 12:00
2/12 12:00
2/14 12:00
2/16 12:00
2/18 12:00
2/20 12:00
2/22 12:00
2/24 12:00
2/26 12:00
2/28 12:00
3/2 12:00
3/4 12:00
3/6 12:00
3/8 12:00
3/10 12:00
3/12 12:00
3/14 12:00
3/16 12:00
3/18 12:00
3/20 12:00
3/22 12:00
3/24 12:00
3/26 12:00
3/28 12:00
3/30 12:00
Date and Time
Oxygen
System On
System Off


SVP-7a
Pressure (inches of $H_2O$)
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
2/4 12:00
2/6 12:00
2/8 12:00
2/10 12:00
2/12 12:00
2/14 12:00
2/16 12:00
2/18 12:00
2/20 12:00
2/22 12:00
2/24 12:00
2/26 12:00
2/28 12:00
3/2 12:00
3/4 12:00
3/6 12:00
3/8 12:00
3/10 12:00
3/12 12:00
3/14 12:00
3/16 12:00
3/18 12:00
3/20 12:00
3/22 12:00
3/24 12:00
3/26 12:00
3/28 12:00
3/30 12:00
Date and Time
Pressure
System On
System Off


SVP-7a
PID (ppm)
18.0
16.0
14.0
12.0
10.0
8.0
6.0
4.0
2.0
0.0
2/4 12:00
2/6 12:00
2/8 12:00
2/10 12:00
2/12 12:00
2/14 12:00
2/16 12:00
2/18 12:00
2/20 12:00
2/22 12:00
2/24 12:00
2/26 12:00
2/28 12:00
3/2 12:00
3/4 12:00
3/6 12:00
3/8 12:00
3/10 12:00
3/12 12:00
3/14 12:00
3/16 12:00
3/18 12:00
3/20 12:00
3/22 12:00
3/24 12:00
3/26 12:00
3/28 12:00
3/30 12:00
Date and Time
PID
System On
System Off


SVP-7a
Oxygen (percentage)
22
21
20
19
18
17
16
15
14
2/4 12:00
2/6 12:00
2/8 12:00
2/10 12:00
2/12 12:00
2/14 12:00
2/16 12:00
2/18 12:00
2/20 12:00
2/22 12:00
2/24 12:00
2/26 12:00
2/28 12:00
3/2 12:00
3/4 12:00
3/6 12:00
3/8 12:00
3/10 12:00
3/12 12:00
3/14 12:00
3/16 12:00
3/18 12:00
3/20 12:00
3/22 12:00
3/24 12:00
3/26 12:00
3/28 12:00
3/30 12:00
Date and Time
Oxygen
System On
System Off


Biovent Well
Pressure (inches of $H_2O$)
39.0
37.0
35.0
33.0
31.0
29.0
2/4 12:00
2/6 12:00
2/8 12:00
2/10 12:00
2/12 12:00
2/14 12:00
2/16 12:00
2/18 12:00
2/20 12:00
2/22 12:00
2/24 12:00
2/26 12:00
2/28 12:00
3/2 12:00
3/4 12:00
3/6 12:00
3/8 12:00
3/10 12:00
3/12 12:00
3/14 12:00
3/16 12:00
3/18 12:00
3/20 12:00
3/22 12:00
3/24 12:00
3/26 12:00
3/28 12:00
3/30 12:00
Date and Time
Pressure
System On
System Off

APPENDIX E-6A

**Oxygen Uptake Test Summary**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

*Parameters Collected Prior to Blower Shut-off*

| Date | Time | $O_2$ Levels (%) | | | | |
|---|---|---|---|---|---|---|
| | | Biovent Well | SVP-5a (shallow) | SVP-6a (shallow) | SVP-6b (deep) | SVP-7a (shallow) |
| 2/13/2015 | 6:45 | 20.6 | 20.5 | 20.6 | 16.6 | 20.5 |

*Parameters Collected Immediately Following Blower Shut-off*

| Time Elapsed (hours) | $O_2$ Levels (%) | | | | | | |
|---|---|---|---|---|---|---|---|
| | Time | Date | Biovent Well | SVP-5a (shallow) | SVP-6a (shallow) | SVP-6b (deep) | SVP-7a (shallow) |
| *7 am, blower* | 7:00 | 2/13/15 | 21.0 | 20.8 | 20.8 | 20.5 | 20.5 |
| 0.5 | 7:30 | 2/13/15 | 20.8 | 20.9 | 21.0 | 20.2 | 20.7 |
| 1 | 8:00 | 2/13/15 | 20.6 | 20.8 | 20.7 | 20.4 | 20.6 |
| 2 | 9:00 | 2/13/15 | 20.4 | 20.5 | 20.5 | 20.3 | 20.3 |
| 3 | 10:00 | 2/13/15 | 20.5 | 20.6 | 20.5 | 20.5 | 20.4 |
| 4 | 11:00 | 2/13/15 | 20.1 | 20.1 | 20.1 | 19.7 | 20.3 |
| 8 | 15:00 | 2/13/15 | 20.6 | 20.4 | 20.3 | 18.5 | 20.0 |
| | | | | 19.3 | 20.2 | | 19.2 |

Collected just after blower was turned on

APPENDIX E-6B

**Oxygen Uptake Test Data Summary**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

*Day - 1 following the $O_2$ Uptake Test after the blower has been turned on*

*Parameters collected at 30 minute intervals at each available SVP*

| | | Pressure (inches of $H_2O$) | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Date** | **Time** | **Blower** | **Manifold** | **BV Well** | **SVP-5a** | **SVP-6a (shallow)** | **SVP-6b (deep)** | **SVP-7a** |
| 2/16/2015 | 7:30 | 10 | 34 | 35 | 0.60 | 0.8 | 0 | 0.9 |
| 2/16/2015 | 8:00 | 44 | 33 | 35 | 0.66 | 0.9 | 0 | 0.9 |
| 2/16/2015 | 8:30 | 44 | 33 | 35 | 0.66 | 0.9 | 0.1 | 1.1 |
| 2/16/2015 | 9:00 | 44 | 33 | 35 | 0.70 | 0.9 | 0.1 | 1.0 |
| 2/16/2015 | 9:30 | 44 | 33 | 35 | 0.72 | 0.9 | 0.1 | 1.1 |
| 2/16/2015 | 10:00 | 44 | 34 | 35 | 0.72 | 1.0 | 0.1 | 1.0 |
| 2/16/2015 | 10:30 | 44 | 34 | 35 | 0.74 | 1.0 | 0.1 | 1.1 |
| 2/16/2015 | 11:00 | 44 | 33 | 35 | 0.74 | 1.0 | 0.1 | 1.0 |
| 2/16/2015 | 11:30 | 44 | 34 | 35 | 0.76 | 1.0 | 0.1 | 1.1 |
| 2/16/2015 | 12:00 | 44 | 34 | 35 | 0.76 | 1.0 | 0.1 | 1.1 |
| 2/16/2015 | 12:30 | 44 | 32 | 35 | 0.78 | 1.0 | 0.3 | 1.0 |
| 2/16/2015 | 13:00 | 44 | 33 | 35 | 0.79 | 1 | 0.1 | 1.1 |
| 2/16/2015 | 13:30 | 44 | 32 | 35 | 0.79 | 1 | 0.1 | 1.0 |
| 2/16/2015 | 14:00 | 44 | 32 | 35 | 0.80 | 1 | 0.1 | 1.1 |

Notes:

PID photoionization detector

VOC volatile organic compound

O2 oxygen

CO2 carbon dioxide

CH4 methane

ppm parts per million

BV biovent

SVP soil vapor probe

APPENDIX E-6C

**Oxygen Uptake Test Data Summary**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

*Day - 1 following the $O_2$ Uptake Test*

*2 Hour Intervals - parameters collected in shallow SVPs*

| | | SVP-5a | | | | SVP-6a | | | | SVP-7a | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Date | Time | PID (VOCs ppm) | $O_2$ (%) | $CO_2$ (%) | $CH_4$ (%) | PID (VOCs ppm) | $O_2$ (%) | $CO_2$ (%) | $CH_4$ (%) | PID (VOCs ppm) | $O_2$ (%) | $CO_2$ (%) | $CH_4$ (%) |
| 2/16/2015 | 7:45 | 0 | 19.3 | 0.2 | 0 | 0.1 | 20.2 | 0.2 | 0 | 0.2 | 19.2 | 0.5 | 0 |
| 2/16/2015 | 9:45 | 0.2 | 20.2 | 0.1 | 0 | 0.2 | 20.2 | 0.1 | 0 | 1.1 | 19.8 | 0.4 | 0 |
| 2/16/2015 | 11:45 | 0 | 20.4 | 0.1 | 0 | 0.3 | 20.4 | 0 | 0 | 1.4 | 20.1 | 0.2 | 0 |
| 2/16/2015 | 13:45 | 0 | 20.5 | 0 | 0 | 0.3 | 20.5 | 0 | 0 | 1.5 | 20.3 | 0.2 | 0 |
| 2/16/2015 | 15:45 | 0 | 20.6 | 0 | 0 | 0.3 | 20.5 | 0 | 0 | 1.4 | 20.3 | 0.1 | 0 |

Notes:

PID photoionization detector

VOC volatile organic compound

O2 oxygen

CO2 carbon dioxide

CH4 methane

ppm parts per million

BV biovent

SVP soil vapor probe

APPENDIX E-7a

**TOTAL EFH (C8-C40) Concentration Change Evaluation**

| Sample Station | Sample Depth (ft) | Starting Conc (mg/kg) | Post-Bioventing Conc (mg/kg) | Conc Decrease (mg/kg) | Notes |
|---|---|---|---|---|---|
| BVBS1293 | 3 - 4 | 24 | 12 | 12 | |
| BVBS1293 | 7 - 8 | 8.8 | 7.5 | 1.3 | |
| BVBS1294 | 2 - 4 | 88 | 26 | 62 | |
| BVBS1294 | 6 - 7 | 11000 | 6300 | 4700 | |
| BVBS1295 | 2.5 - 4 | 16 | 150 | -134 | |
| BVBS1295 | 5.5 - 7 | 15000 | 8.5 | 14991.5 | |
| BVBS1296 | 3 - 4 | 280 | 660 | -380 | |
| BVBS1296 | 7 - 8 | 25 | 2.75 | 22.25 | |
| BVBS1297 | 4 - 5 | 7900 | 5100 | 2800 | |
| BVBS1297 | 7 - 8 | 3.1 | 2.65 | 0.45 | |
| BVBS1298 | 4 - 5 | 18000 | 9700 | 8300 | |
| BVBS1298 | 7 - 8 | 84 | 680 | -596 | |
| BVBS1299 | 4 - 5.5 | 7700 | 3200 | 4500 | |
| BVBS1299 | 7 - 8 | 27 | 2.65 | 24.35 | |
| | mean: | 4296.85 | 1846.575 | 2450.275 | |
| | SD: | 6405.01363 | 3078.63257 | 4474.57653 | |
| | n: | 14 | 14 | 14 | |
| | | **p-value for paired t-test:** | | **0.03060738** | |

**Data Sorted by Starting Concentration**

| Sample Station | Sample Depth (ft) | Starting Conc (mg/kg) | Post-Bioventing Conc (mg/kg) | Conc Decrease (mg/kg) | Subgroup p-value |
|---|---|---|---|---|---|
| BVBS1298 | 4 - 5 | 18000 | 9700 | 8300 | |
| BVBS1295 | 5.5 - 7 | 15000 | 8.5 | 14991.5 | |
| BVBS1294 | 6 - 7 | 11000 | 6300 | 4700 | |
| BVBS1297 | 4 - 5 | 7900 | 5100 | 2800 | |
| BVBS1299 | 4 - 5.5 | 7700 | 3200 | 4500 | 0.01578604 |
| BVBS1296 | 3 - 4 | 280 | 660 | -380 | |
| BVBS1294 | 2 - 4 | 88 | 26 | 62 | |
| BVBS1298 | 7 - 8 | 84 | 680 | -596 | |
| BVBS1299 | 7 - 8 | 27 | 2.65 | 24.35 | |
| BVBS1296 | 7 - 8 | 25 | 2.75 | 22.25 | |
| BVBS1293 | 3 - 4 | 24 | 12 | 12 | |
| BVBS1295 | 2.5 - 4 | 16 | 150 | -134 | |
| BVBS1293 | 7 - 8 | 8.8 | 7.5 | 1.3 | |
| BVBS1297 | 7 - 8 | 3.1 | 2.65 | 0.45 | 0.90700418 |

High concentration and low concentration subgroups identified above.

Notes:

For each sample location, the starting concentration was selected as the greatest of Feb 4 or Mar 3 concentration among normal samples and field duplicates. The Apr 10 sample result was used for the post-bioventing concentration, selecting the greatest value among normal samples and field duplicates.

- Non-detect results evaluated as one-half the reporting limit.
- If result was non-detect and the corresponding result had a measured concentration, the measured concentration was selected.

The reported sample depth corresponds to the sample depth interval where the starting concentration was measured. In some cases, the post-bioventing sample depth interval differed slightly from this interval.

Two-sample t-tests for the difference between means (data paired by sample location) are calculated above.

SD: standard deviation

n: number of results used in calculation

Given the apparent bimodal distribution in the starting concentration data, separate t-tests also were performed for the high-concentration and low-concentration subgroups.

APPENDIX E-7b

**GRO (C4-C12) Concentration Change Evaluation**

| Sample Station | Sample Depth (ft) | Starting Conc (mg/kg) | Post-Bioventing Conc (mg/kg) | Conc Decrease (mg/kg) | Notes |
|---|---|---|---|---|---|
| BVBS1293 | 3 - 4 | 0.55 | 0.55 | 0 | exclude result* |
| BVBS1293 | 7 - 8 | 0.46 | 1.7 | -1.24 | |
| BVBS1294 | 2 - 4 | 9.4 | 1 | 8.4 | |
| BVBS1294 | 6 - 7 | 2000 | 2000 | 0 | |
| BVBS1295 | 2.5 - 4 | 0.6 | 37 | -36.4 | |
| BVBS1295 | 5.5 - 7 | 1100 | 7.9 | 1092.1 | |
| BVBS1296 | 3 - 4 | 25 | 70 | -45 | |
| BVBS1296 | 7 - 8 | 5.3 | 0.485 | 4.815 | |
| BVBS1297 | 4 - 5 | 1300 | 1100 | 200 | |
| BVBS1297 | 7 - 8 | 0.66 | 0.475 | 0.185 | |
| BVBS1298 | 4 - 5 | 2000 | 1700 | 300 | |
| BVBS1298 | 7 - 8 | 12 | 84 | -72 | |
| BVBS1299 | 7 - 8 | 11 | 0.485 | 10.515 | |
| BVBS1299 | 4 - 5.5 | 680 | 390 | 290 | |
| | mean: | 549.570769 | 414.849615 | 134.721154 | |
| | SD: | 787.2443 | 708.765908 | 313.524984 | |
| | n: | 13 | 13 | 13 | |
| | | **p-value for paired t-test:** | | **0.0736345** | |

**Data Sorted by Starting Concentration**

| Sample Station | Sample Depth (ft) | Starting Conc (mg/kg) | Post-Bioventing Conc (mg/kg) | Conc Decrease (mg/kg) | Subgroup p-value |
|---|---|---|---|---|---|
| BVBS1294 | 6 - 7 | 2000 | 2000 | 0 | |
| BVBS1298 | 4 - 5 | 2000 | 1700 | 300 | |
| BVBS1297 | 4 - 5 | 1300 | 1100 | 200 | |
| BVBS1295 | 5.5 - 7 | 1100 | 7.9 | 1092.1 | |
| BVBS1299 | 4 - 5.5 | 680 | 390 | 290 | 0.05710798 |
| BVBS1296 | 3 - 4 | 25 | 70 | -45 | |
| BVBS1298 | 7 - 8 | 12 | 84 | -72 | |
| BVBS1299 | 7 - 8 | 11 | 0.485 | 10.515 | |
| BVBS1294 | 2 - 4 | 9.4 | 1 | 8.4 | |
| BVBS1296 | 7 - 8 | 5.3 | 0.485 | 4.815 | |
| BVBS1297 | 7 - 8 | 0.66 | 0.475 | 0.185 | |
| BVBS1295 | 2.5 - 4 | 0.6 | 37 | -36.4 | |
| BVBS1293 | 7 - 8 | 0.46 | 1.7 | -1.24 | 0.9119505 |

High concentration and low concentration subgroups identified above.

Notes:

For each sample location, the starting concentration was selected as the greatest of Feb 4 or Mar 3 concentration among normal samples and field duplicates. The Apr 10 sample result was used for the post-bioventing concentration, selecting the greatest value among normal samples and field duplicates.

- Non-detect results evaluated as one-half the reporting limit.
- If result was non-detect and the corresponding result had a measured concentration, the measured concentration was selected.

The reported sample depth corresponds to the sample depth interval where the starting concentration was measured. In some cases, the post-bioventing sample depth interval differed slightly from this interval.

Two-sample t-tests for the difference between means (data paired by sample location) are calculated above.

SD: standard deviation

n: number of results used in calculation

*Result excluded from evaluation if both starting and post-bioventing concentrations were non-detect (reflected above as n-value <14).

Given the apparent bimodal distribution in the starting concentration data, separate t-tests also were performed for the high-concentration and low-concentration subgroups.

APPENDIX E-7c

**PAHTEQ Concentration Change Evaluation**

| Sample Station | Sample Depth (ft) | Starting Conc (µg/kg) | Post-Bioventing Conc (µg/kg) | Conc Decrease (µg/kg) | Notes |
|---|---|---|---|---|---|
| BVBS1293 | 3 - 4 | 34.7 | 0 | 34.7 | |
| BVBS1293 | 7 - 8 | 0 | 0 | 0 | exclude result* |
| BVBS1294 | 2 - 4 | 14.694 | 0 | 14.694 | |
| BVBS1294 | 6 - 7 | 96.88 | 0 | 96.88 | |
| BVBS1295 | 2.5 - 4 | 0 | 13.442 | -13.442 | |
| BVBS1295 | 5.5 - 8 | 10.7 | 0 | 10.7 | |
| BVBS1296 | 3 - 4 | 16.2 | 16.5 | -0.3 | |
| BVBS1296 | 7 - 8 | 0 | 0 | 0 | exclude result* |
| BVBS1297 | 4 - 5 | 77.09 | 65.24 | 11.85 | |
| BVBS1297 | 7 - 8 | 0 | 0 | 0 | exclude result* |
| BVBS1298 | 4 - 5 | 129.67 | 79.6 | 50.07 | |
| BVBS1298 | 7 - 8 | 0 | 0 | 0 | exclude result* |
| BVBS1299 | 7 - 8 | 0 | 0 | 0 | exclude result* |
| BVBS1299 | 4 - 5.5 | 30.38 | 18.82 | 11.56 | |
| | mean: | 45.5904444 | 21.5113333 | 24.0791111 | |
| | SD: | 44.9393923 | 30.0726417 | 32.9086502 | |
| | n: | 9 | 9 | 9 | |
| | | **p-value for paired t-test:** | | **0.02972382** | |

**Data Sorted by Starting Concentration**

| Sample Station | Sample Depth (ft) | Starting Conc (µg/kg) | Post-Bioventing Conc (µg/kg) | Conc Decrease (µg/kg) |
|---|---|---|---|---|
| BVBS1298 | 4 - 5 | 129.67 | 79.6 | 50.07 |
| BVBS1294 | 6 - 7 | 96.88 | 0 | 96.88 |
| BVBS1297 | 4 - 5 | 77.09 | 65.24 | 11.85 |
| BVBS1293 | 3 - 4 | 34.7 | 0 | 34.7 |
| BVBS1299 | 4 - 5.5 | 30.38 | 18.82 | 11.56 |
| BVBS1296 | 3 - 4 | 16.2 | 16.5 | -0.3 |
| BVBS1294 | 2 - 4 | 14.694 | 0 | 14.694 |
| BVBS1295 | 5.5 - 8 | 10.7 | 0 | 10.7 |
| BVBS1295 | 2.5 - 4 | 0 | 13.442 | -13.442 |

No sub-groups identified

Notes:

For each sample location, the starting concentration was selected as the greatest of Feb 4 or Mar 3 concentration among normal samples and field duplicates. The Apr 10 sample result was used for the post-bioventing concentration, selecting the greatest value among normal samples and field duplicates.

- Given the nature of PAHTEQ results where non-detects are reported as 0, no adjustment was made for non-detect results

The reported sample depth corresponds to the sample depth interval where the starting concentration was measured. In some cases, the post-bioventing sample depth interval differed slightly from this interval.

Two-sample t-tests for the difference between means (data paired by sample location) are calculated above.

SD: standard deviation

n: number of results used in calculation

*Result excluded from evaluation if both starting and post-bioventing concentrations were non-detect (reflected above as n-value <14).

APPENDIX E-7d

**Bis(2-ethylhexyl)phthalate Concentration Change Evaluation**

| Sample Station | Sample Depth (ft) | Starting Conc (µg/kg) | Post-Bioventing Conc (µg/kg) | Conc Decrease (µg/kg) | Notes |
|---|---|---|---|---|---|
| BVBS1293 | 3 - 4 | 1200 | 14 | 1186 | |
| BVBS1293 | 7 - 8 | 25 | 11.5 | 13.5 | |
| BVBS1294 | 2 - 4 | 380 | 18 | 362 | |
| BVBS1294 | 6 - 7 | 1800 | 12.5 | 1787.5 | |
| BVBS1295 | 2.5 - 4.5 | 10 | 450 | -440 | |
| BVBS1295 | 5.5 - 8 | 820 | 10.5 | 809.5 | |
| BVBS1296 | 3 - 4 | 740 | 2000 | -1260 | |
| BVBS1296 | 7 - 8 | 280 | 11 | 269 | |
| BVBS1297 | 4 - 5 | 1100 | 1200 | -100 | |
| BVBS1297 | 7 - 8 | 10.5 | 10.5 | 0 | exclude result* |
| BVBS1298 | 4 - 5 | 2900 | 1300 | 1600 | |
| BVBS1298 | 7 - 8 | 48 | 76 | -28 | |
| BVBS1299 | 4 - 5.5 | 770 | 540 | 230 | |
| BVBS1299 | 7 - 8 | 11 | 10.5 | 0.5 | exclude result* |
| | mean: | 839.416667 | 470.291667 | 369.125 | |
| | SD: | 846.559074 | 672.635571 | 864.999977 | |
| | n: | 12 | 12 | 12 | |
| | | **p-value for paired t-test:** | | **0.08369725** | |

**Data Sorted by Starting Concentration**

| Sample Station | Sample Depth (ft) | Starting Conc (µg/kg) | Post-Bioventing Conc (µg/kg) | Conc Decrease (µg/kg) |
|---|---|---|---|---|
| BVBS1298 | 4 - 5 | 2900 | 1300 | 1600 |
| BVBS1294 | 6 - 7 | 1800 | 12.5 | 1787.5 |
| BVBS1293 | 3 - 4 | 1200 | 14 | 1186 |
| BVBS1297 | 4 - 5 | 1100 | 1200 | -100 |
| BVBS1295 | 5.5 - 8 | 820 | 10.5 | 809.5 |
| BVBS1299 | 4 - 5.5 | 770 | 540 | 230 |
| BVBS1296 | 3 - 4 | 740 | 2000 | -1260 |
| BVBS1294 | 2 - 4 | 380 | 18 | 362 |
| BVBS1296 | 7 - 8 | 280 | 11 | 269 |
| BVBS1298 | 7 - 8 | 48 | 76 | -28 |
| BVBS1293 | 7 - 8 | 25 | 11.5 | 13.5 |
| BVBS1295 | 2.5 - 4.5 | 10 | 450 | -440 |

No sub-groups identified

Notes:

For each sample location, the starting concentration was selected as the greatest of Feb 4 or Mar 3 concentration among normal samples and field duplicates. The Apr 10 sample result was used for the post-bioventing concentration, selecting the greatest value among normal samples and field duplicates.

- Non-detect results evaluated as one-half the reporting limit.
- If result was non-detect and corresponding result had a measured concentration, the measured concentration was selected.

The reported sample depth corresponds to the sample depth interval where the starting concentration was measured. In some cases, the post-bioventing sample depth interval differed slightly from this interval.

Two-sample t-tests for the difference between means (data paired by sample location) are calculated above.

SD: standard deviation

n: number of results used in calculation

*Result excluded from evaluation if both starting and post-bioventing concentrations were non-detect (reflected above as n-value <14).

APPENDIX E-7e

**n-Propylbenzene Concentration Change Evaluation**

| Sample Station | Sample Depth (ft) | Starting Conc (µg/kg) | Post-Bioventing Conc (µg/kg) | Conc Decrease (µg/kg) | Notes |
|---|---|---|---|---|---|
| BVBS1293 | 3 - 4 | 0.55 | 0.5 | 0.05 | exclude result* |
| BVBS1293 | 7 - 8 | 0.485 | 0.485 | 0 | exclude result* |
| BVBS1294 | 2 - 4 | 0.55 | 0.55 | 0 | exclude result* |
| BVBS1294 | 6 - 7 | 17 | 19 | -2 | |
| BVBS1295 | 2.5 - 4 | 0.55 | 0.465 | 0.085 | exclude result* |
| BVBS1295 | 5.5 - 7 | 8 | 0.475 | 7.525 | |
| BVBS1296 | 3 - 4 | 0.65 | 0.5 | 0.15 | exclude result* |
| BVBS1296 | 7 - 8 | 0.485 | 0.485 | 0 | exclude result* |
| BVBS1297 | 4 - 5 | 4.1 | 0.5 | 3.6 | |
| BVBS1297 | 7 - 8 | 0.465 | 0.465 | 0 | exclude result* |
| BVBS1298 | 4 - 5 | 34 | 9.3 | 24.7 | |
| BVBS1298 | 7 - 8 | 0.49 | 1 | -0.51 | |
| BVBS1299 | 4 - 5.5 | 6.4 | 1.4 | 5 | |
| BVBS1299 | 7 - 8 | 0.475 | 0.485 | -0.01 | exclude result* |
| | mean: | 11.665 | 5.27916667 | 6.38583333 | |
| | SD: | 12.252157 | 7.53270232 | 9.63600042 | |
| | n: | 6 | 6 | 6 | |
| | | **p-value for paired t-test:** | | **0.08272732** | |

**Data Sorted by Starting Concentration**

| Sample Station | Sample Depth (ft) | Starting Conc (µg/kg) | Post-Bioventing Conc (µg/kg) | Conc Decrease (µg/kg) |
|---|---|---|---|---|
| BVBS1298 | 4 - 5 | 34 | 9.3 | 24.7 |
| BVBS1294 | 6 - 7 | 17 | 19 | -2 |
| BVBS1295 | 5.5 - 7 | 8 | 0.475 | 7.525 |
| BVBS1299 | 4 - 5.5 | 6.4 | 1.4 | 5 |
| BVBS1297 | 4 - 5 | 4.1 | 0.5 | 3.6 |
| BVBS1298 | 7 - 8 | 0.49 | 1 | -0.51 |

No sub-groups identified

Notes:

For each sample location, the starting concentration was selected as the greatest of Feb 4 or Mar 3 concentration among normal samples and field duplicates. The Apr 10 sample result was used for the post-bioventing concentration, selecting the greatest value among normal samples and field duplicates.

- Non-detect results evaluated as one-half the reporting limit.
- If result was non-detect and corresponding result had a measured concentration, the measured concentration was selected.

The reported sample depth corresponds to the sample depth interval where the starting concentration was measured. In some cases, the post-bioventing sample depth interval differed slightly from this interval.

Two-sample t-tests for the difference between means (data paired by sample location) are calculated above.

SD: standard deviation

n: number of results used in calculation

*Result excluded from evaluation if both starting and post-bioventing concentrations were non-detect (reflected above as n-value <14).

APPENDIX E-7f

**sec-Butylbenzene Concentration Change Evaluation**

| Sample Station | Sample Depth (ft) | Starting Conc (µg/kg) | Post-Bioventing Conc (µg/kg) | Conc Decrease (µg/kg) | Notes |
|---|---|---|---|---|---|
| BVBS1293 | 3 - 4 | 0.55 | 0.5 | 0.05 | exclude result* |
| BVBS1293 | 7 - 8 | 0.485 | 0.485 | 0 | exclude result* |
| BVBS1294 | 2 - 4 | 0.55 | 0.55 | 0 | exclude result* |
| BVBS1294 | 6 - 7 | 23 | 23 | 0 | |
| BVBS1295 | 2.5 - 4.5 | 0.55 | 0.465 | 0.085 | exclude result* |
| BVBS1295 | 5.5 - 7 | 17 | 0.475 | 16.525 | |
| BVBS1296 | 3 - 4 | 0.65 | 0.5 | 0.15 | exclude result* |
| BVBS1296 | 7 - 8 | 0.485 | 0.485 | 0 | exclude result* |
| BVBS1297 | 4 - 5 | 9 | 1.9 | 7.1 | |
| BVBS1297 | 7 - 8 | 0.465 | 0.465 | 0 | exclude result* |
| BVBS1298 | 4 - 5 | 35 | 15 | 20 | |
| BVBS1298 | 7 - 8 | 1.1 | 2 | -0.9 | |
| BVBS1299 | 4 - 5.5 | 24 | 7 | 17 | |
| BVBS1299 | 7 - 8 | 0.475 | 0.485 | -0.01 | exclude result* |
| | mean: | 18.1833333 | 8.22916667 | 9.95416667 | |
| | SD: | 11.9783833 | 8.99467088 | 9.15186343 | |
| | n: | 6 | 6 | 6 | |
| | | **p-value for paired t-test:** | | **0.0223284** | |

**Data Sorted by Starting Concentration**

| Sample Station | Sample Depth (ft) | Starting Conc (µg/kg) | Post-Bioventing Conc (µg/kg) | Conc Decrease (µg/kg) |
|---|---|---|---|---|
| BVBS1298 | 4 - 5 | 35 | 15 | 20 |
| BVBS1299 | 4 - 5.5 | 24 | 7 | 17 |
| BVBS1294 | 6 - 7 | 23 | 23 | 0 |
| BVBS1295 | 5.5 - 7 | 17 | 0.475 | 16.525 |
| BVBS1297 | 4 - 5 | 9 | 1.9 | 7.1 |
| BVBS1298 | 7 - 8 | 1.1 | 2 | -0.9 |

No sub-groups identified

Notes:

For each sample location, the starting concentration was selected as the greatest of Feb 4 or Mar 3 concentration among normal samples and field duplicates. The Apr 10 sample result was used for the post-bioventing concentration, selecting the greatest value among normal samples and field duplicates.

- Non-detect results evaluated as one-half the reporting limit.
- If result was non-detect and corresponding result had a measured concentration, the measured concentration was selected.

The reported sample depth corresponds to the sample depth interval where the starting concentration was measured. In some cases, the post-bioventing sample depth interval differed slightly from this interval.

Two-sample t-tests for the difference between means (data paired by sample location) are calculated above.

SD: standard deviation

n: number of results used in calculation

*Result excluded from evaluation if both starting and post-bioventing concentrations were non-detect (reflected above as n-value <14).

# Appendix F
# Cultural Resource Compliance and Biological Survey Documentation

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# Cultural Resource Compliance for Order No. R4-2014-0187: General Waste Discharge Requirements for In-Situ Groundwater Remediation and Groundwater Re-Injection (File No. 01-116)

| | |
|---|---|
| PREPARED FOR: | Jon Freed Olivia Edwards |
| COPY TO: | California Regional Water Quality Control Board; Los Angeles Region |
| PREPARED BY: | Phil Reid MA RPA |
| DATE: | July 15, 2015 |

## Order No. R4-2014-0187

Order No. R4-2014-0187 details the technical aspects and permitting responsibilities for an in situ soils treatment pilot program to be carried out at Santa Susana Field Laboratory (SSFL) in Canoga Park, California. Cultural Resource requirements set out in Order No. R4-2014-0187 include compliance with California Environmental Quality Act (CEQA) guidelines as set forth in Section 15064.5(b) (c) (e) and (f) as well as the California Health and Safety Code Section 7050.5 and the California Public Resource Code Section 5097.98. Current ongoing studies, procedures and consultation at SSFL satisfy or exceed the cultural resource requirements set out in Order No. R4-2014-0187.

### Santa Susana Field Laboratory NEPA and Section 106 effort

In April 2014, NASA entered into a Programmatic Agreement (NASA 2014a) with the California SHPO and the ACHP to address the adverse effect on historic properties from the demolition and remediation activities on NASA administered property at SSFL. The PA establishes a process for consultation, review, and compliance during the remediation process. Remediation actions may include the demolition of existing buildings and structures, environmental testing, and the cleanup of soils and groundwater.

A literature review for the project footprint was carried out in June of 2014 in preparation for a pedestrian archaeological survey. The results of the literature review showed no known cultural resources within the project footprint, or in the surrounding area. The pedestrian survey that covered the whole of the SSFL discovered no new cultural resources within the project footprint or the surrounding area (Corbet et al 2015).

In July 2014 the SSFL Sacred sites Council (SSC) was formed to help facilitate consultation between the Native American community and the various responsible parties at SSFL. Consultation with the SSFL SSC is undertaken periodically and is ongoing. Additionally the Santa Ynez Band of Chumash Indians (SYBCI) have designated the SSFL a sacred site.

All work that takes place in the vicinity of a known archaeological resource is done under NASA's Environmentally Sensitive Area Action Plan or ESAAP (NASA 2015). Mitigation measures for any impacts to cultural resources have already been implemented site wide at SSFL, per management SOP's listed in the SSFL ICRMP (NASA 2014b) and the SSFL ESAAP (NASA 2015). Any human remains finds at SSFL will be managed according the California Health and Safety Code section 7050.5 and California Public Resources Code section 5097.98 and NAGPRA per the SSFL ICRMP.

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## References

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National Aeronautics and Space Administration (NASA). 2014a. *Programmatic Agreement among National Aeronautics and Space Administration, The California State Historic Preservation Officer, and the Advisory Council on Historic Preservation Regarding Demolition, Groundwater and Soils Cleanup*. Santa Susana Field Laboratory, NASA Areas I and II, Ventura County, California.

National Aeronautics and Space Administration (NASA). 2014b. *Integrated Cultural Resources Management Plan for Santa Susana Field Laboratory Ventura County, California, 2014 – 2019*. Santa Susana Field Laboratory, NASA Areas I and II, Ventura County, California.

National Aeronautics and Space Administration (NASA). 2015. *Environmentally Sensitive Area Action Plan (ESAAP) for Santa Susana Field Laboratory, Ventura County, California.* Santa Susana Field Laboratory, NASA Areas I and II, Ventura County, California.

# Pre-Activity Biological Survey for the CH505 Bioventing/ISCO Treatability Study, National Aeronautics and Space Administration, Santa Susana Field Laboratory, Ventura County, California

PREPARED FOR: Olivia Edwards/CH2M HILL
Jonathan Freed/CH2M HILL

COPY TO: Randy Dean/CH2M HILL
Steve Long/CH2M HILL

PREPARED BY: Gary Santolo

DATE: November 12, 2015

PROJECT NUMBER: 476119.01.02

CH2M HILL biologist Gary Santolo conducted a general plant and wildlife survey at the Bravo Site within the area where the CH505 Bioventing/In Situ Chemical Oxidation (ISCO) Treatability Study (TS), hereinafter referred to as the Project Area, will occur (Figure 1). These surveys were completed on January 28, 2015, in advance of the proposed activities. The activities will include using a direct-push technology drill rig to set three shallow soil vapor probes and one biovent well to a maximum depth of 8 feet below ground surface. During installation, soil samples will be collected and after installation of the soil vapor probes, soil gas samples will be collected. The biovent well will be connected to a compressor/air injection pump and will inject air into the well for up to 6 weeks. Part of this will require setting conduit from HAR-20 to the TS area. Following the 6 weeks of air injections, additional soil samples will be collected and a 10-foot by 10-foot area (see the green square on Figure 2) will be infiltrated with 1,400 gallons of substrate (persulfate). After infiltration, soil samples will be collected and the SVPs and biovent well will be removed. The Project Area is located in the Bravo Skim Pond at the Bravo Site approximately 61 foot from PZ-070 (Figure 1).

The intent of the survey was to evaluate the potential for impacts from the proposed activities to sensitive biological resources. The survey area encompassed the proposed access routes and work areas, as well as potentially suitable surrounding habitats.

The air temperature during the survey ranged from about 65 to 75 degrees Fahrenheit, the winds were calm, and the sky was overcast. The Project Area is small and was investigated by systematically walking to grid the entire area. Binoculars were used to identify bird species from afar. The area was sparsely vegetated with coyotebrush (*Baccharis pilularis*), yerba santa (*Eriodictyon crassifolium*), laurel sumac (*Malosma laurina*), deerweed (*Acmispon glaber*), stork's bill (*Erodium* spp.), and non-native grasses (Figures 3 through 6).

No Santa Susana tarplant (*Deinandra minthornii*) was found within the footprint of any of the proposed activities or access routes.

This survey occurred outside the nesting season (i.e., primarily March through July) for most birds. Birds were observed opportunistically. Few birds were observed foraging in the vicinity of the project sites (Table 1).

Woodrats (*Neotoma* sp.) are known to occur in the Project Area; however, no middens were observed in the vicinity of the Project Area. Wildlife signs (i.e., burrows, tracks, and runways) of common species were observed (Table 1) in the vicinity of the Project Area. Existing best management practices (e.g., speed limits) should minimize any risk to wildlife that may use the area.

At this time, there are no biological concerns within or adjacent to the proposed Project Area. If the proposed work activities are not initiated at the site before the beginning of the bird nesting season, it is recommended that a bird nest survey be conducted.


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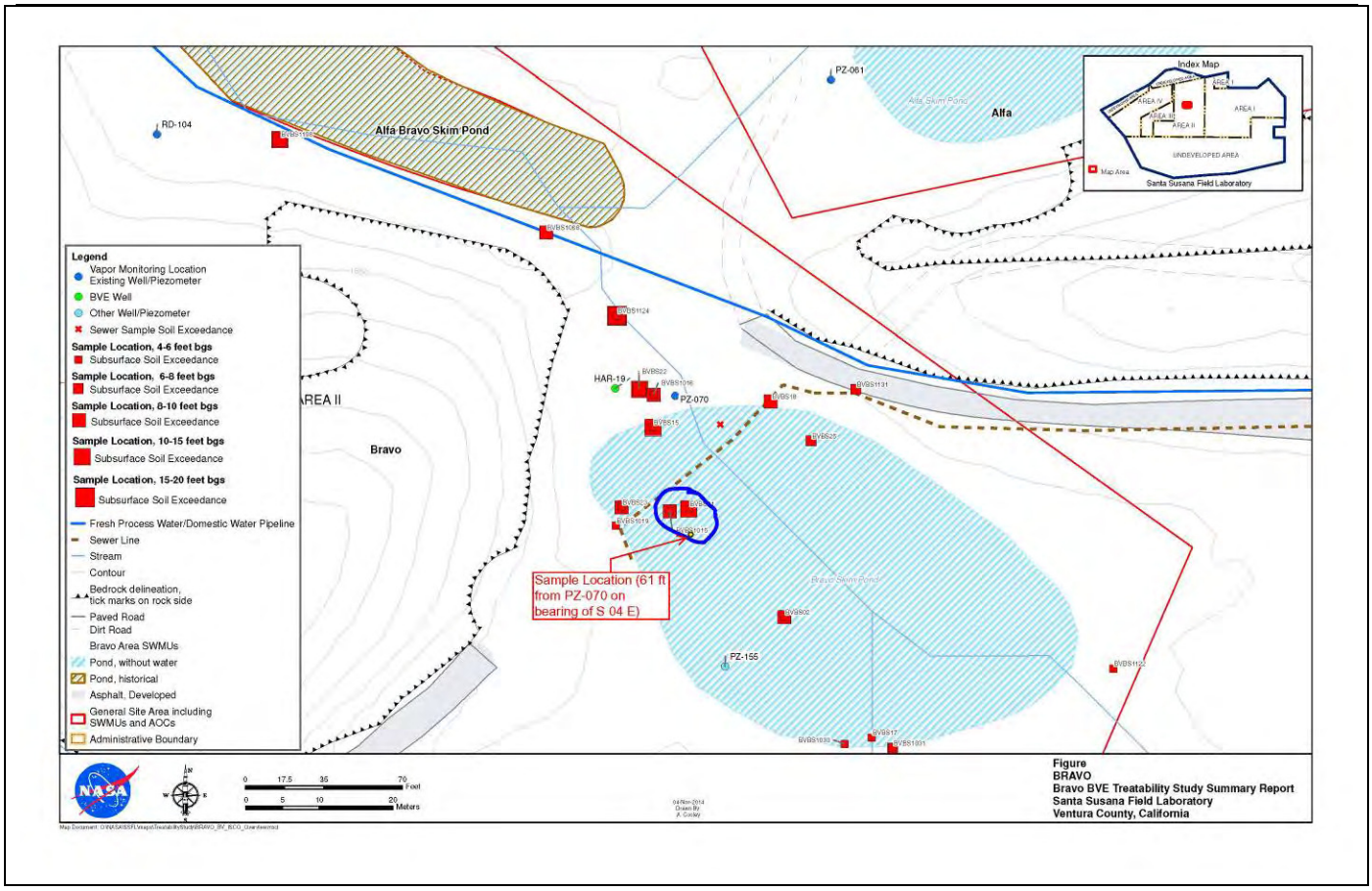


**Figure 1. Locations of NASA Santa Susana Field Laboratory CH505 Bioventing/ISCO TS.**


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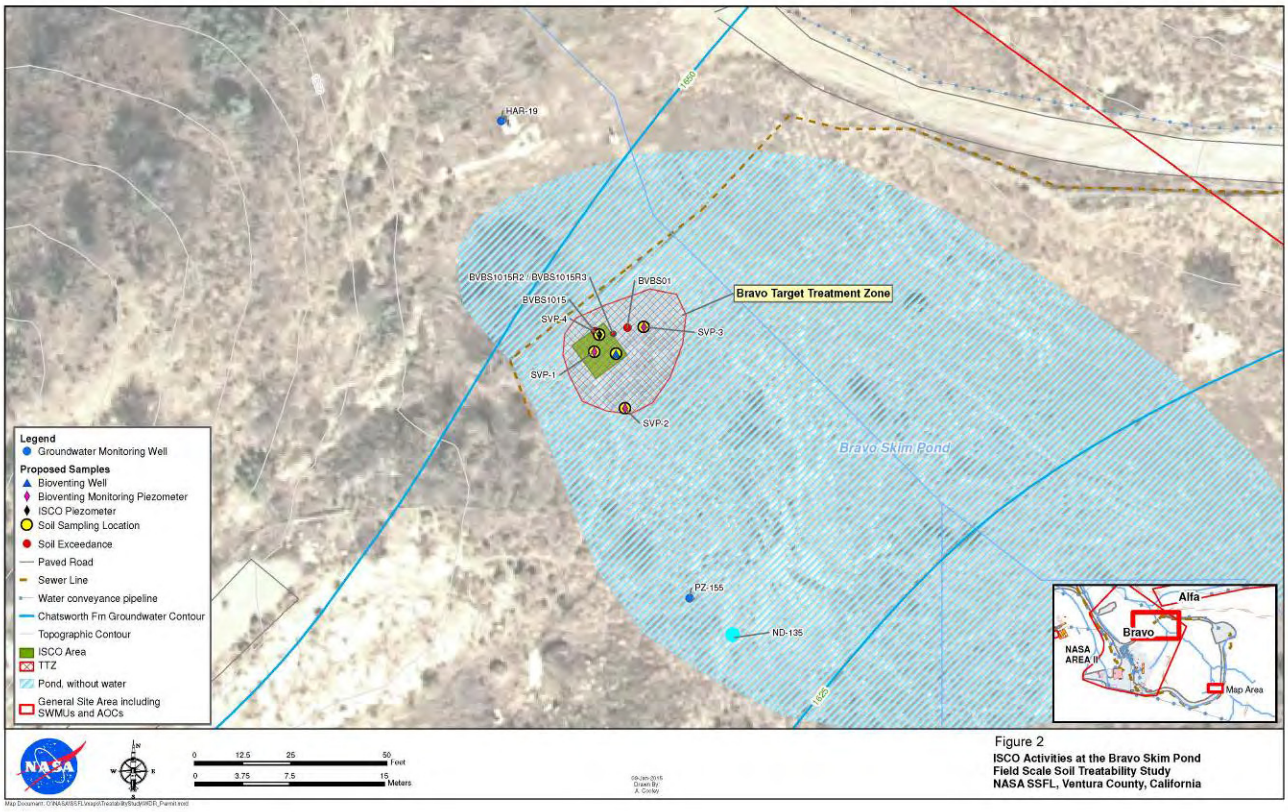


**Figure 2. Location of ISCO activities.**

**Figure 3. Looking southeast over Project Area.**

**Figure 4. Looking south over Project Area.**


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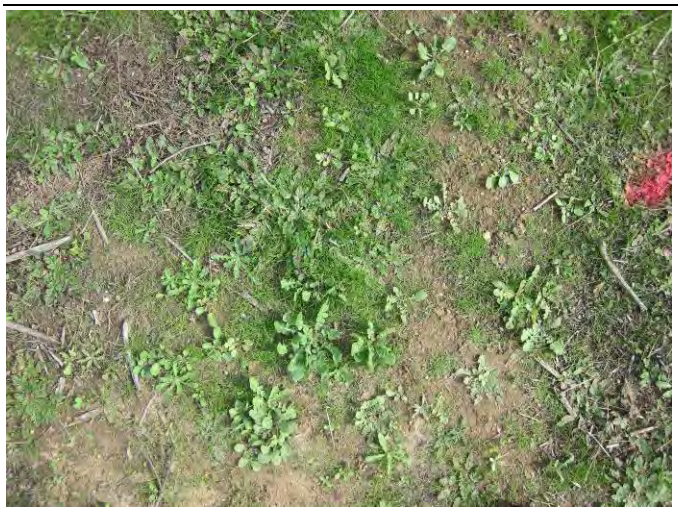

**Figure 5. Looking down at annual grasses and stork's bill ground cover.**

**Figure 6. Deerweed at the Project Area.**

TABLE 1
**Wildlife observations during nest survey conducted at the Bravo site, January 28, 2015.**

| Common Name | Scientific Name |
|---|---|
| ***Birds*** | |
| Common Raven | *Corvus corax* |
| House Finch | *Carpodacus mexicanus* |
| California Towhee | *Melozone crissalis* |
| ***Mammals*** | |
| Botta's Pocket Gopher (burrows) | *Thomomys bottae* |
| Vole species (runways) | *Microtus* sp. |
| Mouse species (burrows) | Rodentia |
| Bobcat (tracks) | *Felis rufus* |


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# Bravo Site Bedrock Vapor Extraction, Bioventing, and Landfarm Target Treatment Zone Biological Survey, National Aeronautics and Space Administration, Santa Susana Field Laboratory, Ventura County, California

PREPARED FOR: Olivia Edwards/CH2M HILL

COPY TO: Jonathan Freed/ CH2M HILL
Randy Dean/CH2M HILL
Steve Long/CH2M HILL

PREPARED BY: Gary Santolo/CH2M HILL

DATE: November 12, 2015

PROJECT NUMBER: 651492.01.01

CH2M HILL biologist Gary Santolo conducted a general plant, wildlife, and bird nesting survey of the target treatment zone for the bedrock vapor extraction (BVE), bioventing, and landfarm projects (Figure 1) on July 14, 2015. The temperature during the survey ranged from about 75 to 80 degrees Fahrenheit, the winds were calm, and the sky was clear. The project sites were investigated by systematically walking to grid the entire accessible area and then using the roads around and within the project area. Binoculars were used to identify bird species and nests from afar. Vegetation at the site consists of mustard, yerba santa, laurel sumac, deerweed, and non-native grasses (Photo 1). No Santa Susana tarplant was found within the footprint of any of the activities that will take place.

Birds were observed for behavior that would indicate that there were nests in the area (e.g., vocalizations, distraction displays, and aggressive displays). A windshield survey using binoculars was conducted in the surrounding area using Alfa, Bravo, and CTL IV roads to look for raptor nests. Although a number of birds were observed foraging in the vicinity of the project sites (Table 1), no active nests were found. A juvenile ash-throated flycatcher (*Myiarchus cinerascens*) was observed following and food-begging from an adult during the survey, indicating that there had been a successful nest in the vicinity of the project site.

Although no active bird nests were found, a number of woodrat middens are located around the project site. None of these middens have been found in the active footprint and they should not be disturbed. Existing best management practices (e.g., speed limits) should minimize any risk to these or other wildlife that may use the area. Coyote (*Canis latrans*) scat and gopher (*Thomomys bottae*) burrows were observed during the survey.

At this time, there does not appear to be bird nests or other biological concerns within or adjacent to the footprints of the BVE, bioventing, and landfarm projects target treatment zone. Bird species that could potentially nest at the site were observed (Table 1); however, it is unlikely new nests will be started this late in the nesting season.


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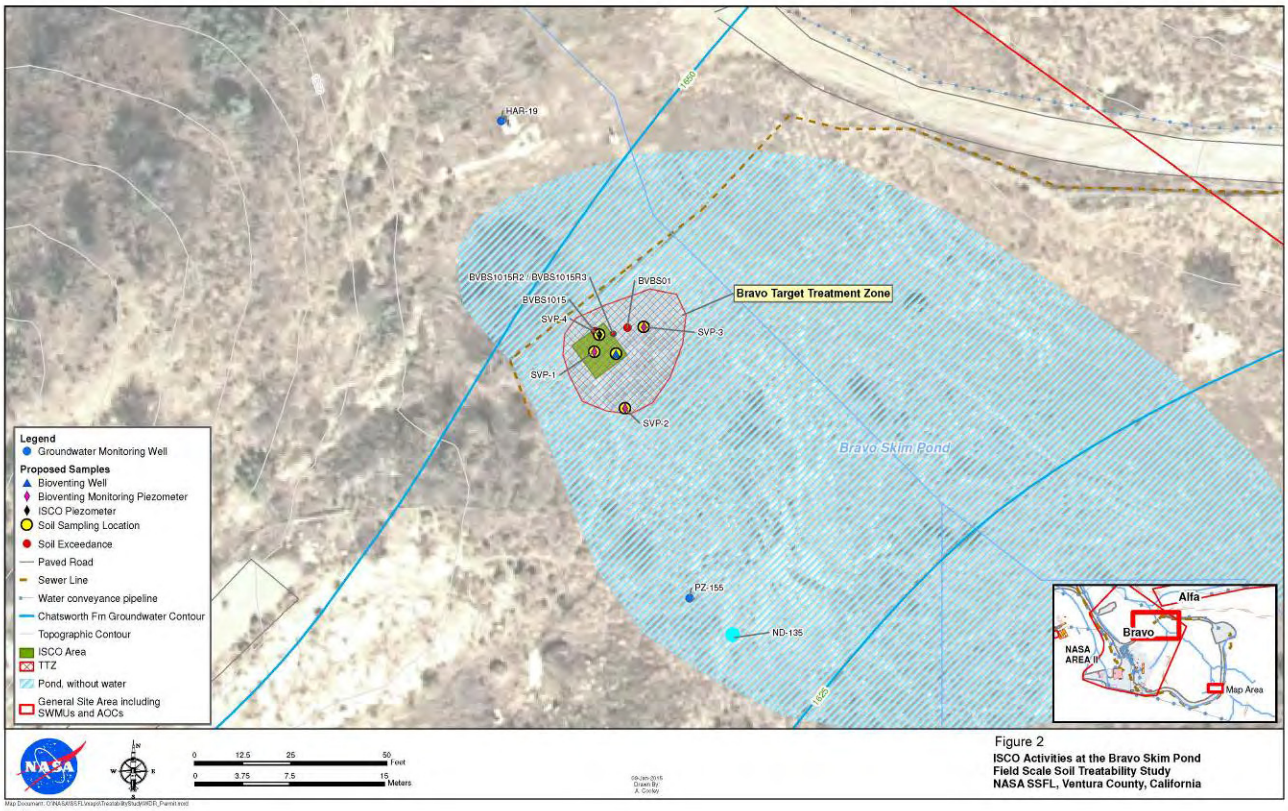


**Figure 1. Locations of BVE and landfarm projects within the Bravo site.**


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**Photo 1. Overview of Bravo site.**

TABLE 1
**Birds observed during nest survey conducted at the Bravo site, June 19, 2014.**

| Common Name | Scientific Name |
|---|---|
| Mourning dove | *Zenaida macroura* |
| Ash-throated flycatcher | *Myiarchus cinerascens* |
| Western Scrub-jay | *Aphelocoma californica* |
| Rock wren | *Salpinctes obsoletus* |
| White-crowned Sparrow | *Zonotrichia leucophrys* |
| Spotted Towhee | *Pipilo maculatus* |
| California Towhee | *Melozone crissalis* |
| House Finch | *Carpodacus mexicanus* |


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# Appendix G
# ISCO Infiltration Data and Evaluation

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APPENDIX G-1

**Analytical Data - August 2015 Post-ISCO Soil Sampling**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | FSP SL | Units | FSP Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1294 | BVBS1294S007 | N | 8/18/2015 | 2 - 4 | SW8015B | HC | Diesel Range Organics (C12-C14) | 9200 = | 2900 | 5900 | 5000 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S007 | N | 8/18/2015 | 2 - 4 | SW8015B | HC | Diesel Range Organics (C15-C20) | 8700 = | 2900 | 5900 | 5000 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S007 | N | 8/18/2015 | 2 - 4 | SW8015B | HC | Diesel Range Organics (C21-C30) | 5900 U | 2900 | 5900 | 5000 | µg/kg | X | N |
| SO | BVBS1294 | BVBS1294S007 | N | 8/18/2015 | 2 - 4 | SW8015B | HC | Diesel Range Organics (C8-C11) | 5900 U | 2900 | 5900 | 1000 | µg/kg | X | RL |
| SO | BVBS1294 | BVBS1294S007 | N | 8/18/2015 | 2 - 4 | SW8015B | HC | GRO (C4-C12) | 70000 J | 510 | 1000 | 1000 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S007 | N | 8/18/2015 | 2 - 4 | SW8015B | HC | ORO (C31-C40) | 12000 U | 5900 | 12000 | 10000 | µg/kg | X | N |
| SO | BVBS1294 | BVBS1294S007 | N | 8/18/2015 | 2 - 4 | SW8015B | HC | TOTAL EFH(C8-C40) | 23000 = | 2900 | 5900 | 10000 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S007 | N | 8/18/2015 | 2 - 4 | SW8270C-SIM | PAH | 1-Methylnaphthalene | 12 U | 5.9 | 12 | 2.5 | µg/kg | X | RL |
| SO | BVBS1294 | BVBS1294S007 | N | 8/18/2015 | 2 - 4 | SW8270C-SIM | PAH | 2-Methylnaphthalene | 12 U | 5.9 | 12 | 2.5 | µg/kg | X | RL |
| SO | BVBS1294 | BVBS1294S007 | N | 8/18/2015 | 2 - 4 | SW8270C-SIM | PAH | Acenaphthene | 12 U | 5.9 | 12 | 2.5 | µg/kg | X | RL |
| SO | BVBS1294 | BVBS1294S007 | N | 8/18/2015 | 2 - 4 | SW8270C-SIM | PAH | Acenaphthylene | 12 U | 5.9 | 12 | 2.5 | µg/kg | X | RL |
| SO | BVBS1294 | BVBS1294S007 | N | 8/18/2015 | 2 - 4 | SW8270C-SIM | PAH | Anthracene | 12 U | 5.9 | 12 | 2.5 | µg/kg | X | RL |
| SO | BVBS1294 | BVBS1294S007 | N | 8/18/2015 | 2 - 4 | SW8270C-SIM | PAH | Benzo(a)anthracene | 12 U | 5.9 | 12 | NC | µg/kg | | NC |
| SO | BVBS1294 | BVBS1294S007 | N | 8/18/2015 | 2 - 4 | SW8270C-SIM | PAH | Benzo(a)pyrene | 7.7 J | 5.9 | 12 | NC | µg/kg | | NC |
| SO | BVBS1294 | BVBS1294S007 | N | 8/18/2015 | 2 - 4 | SW8270C-SIM | PAH | Benzo(b)fluoranthene | 12 U | 5.9 | 12 | NC | µg/kg | | NC |
| SO | BVBS1294 | BVBS1294S007 | N | 8/18/2015 | 2 - 4 | SW8270C-SIM | PAH | Benzo(ghi)perylene | 7.5 J | 5.9 | 12 | 2.5 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S007 | N | 8/18/2015 | 2 - 4 | SW8270C-SIM | PAH | Benzo(k)fluoranthene | 12 U | 5.9 | 12 | NC | µg/kg | | NC |
| SO | BVBS1294 | BVBS1294S007 | N | 8/18/2015 | 2 - 4 | SW8270C-SIM | PAH | Chrysene | 12 U | 5.9 | 12 | NC | µg/kg | | NC |
| SO | BVBS1294 | BVBS1294S007 | N | 8/18/2015 | 2 - 4 | SW8270C-SIM | PAH | Dibenzo(a,h)anthracene | 12 U | 5.9 | 12 | NC | µg/kg | | NC |
| SO | BVBS1294 | BVBS1294S007 | N | 8/18/2015 | 2 - 4 | SW8270C-SIM | PAH | Fluoranthene | 15 = | 5.9 | 12 | 5.2 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S007 | N | 8/18/2015 | 2 - 4 | SW8270C-SIM | PAH | Fluorene | 12 U | 5.9 | 12 | 3.8 | µg/kg | X | RL |
| SO | BVBS1294 | BVBS1294S007 | N | 8/18/2015 | 2 - 4 | SW8270C-SIM | PAH | Indeno(1,2,3-cd)pyrene | 12 U | 5.9 | 12 | NC | µg/kg | | NC |
| SO | BVBS1294 | BVBS1294S007 | N | 8/18/2015 | 2 - 4 | SW8270C-SIM | PAH | Naphthalene | 12 U | 5.9 | 12 | 3.6 | µg/kg | X | RL |
| SO | BVBS1294 | BVBS1294S007 | N | 8/18/2015 | 2 - 4 | SW8270C-SIM | PAH | PAHTEQM | 7.7 = | | | 4.47 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S007 | N | 8/18/2015 | 2 - 4 | SW8270C-SIM | PAH | Phenanthrene | 12 U | 5.9 | 12 | 3.9 | µg/kg | X | RL |
| SO | BVBS1294 | BVBS1294S007 | N | 8/18/2015 | 2 - 4 | SW8270C-SIM | PAH | Pyrene | 16 = | 5.9 | 12 | 5.6 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S007 | N | 8/18/2015 | 2 - 4 | SW8270C-SIM | PHTH | Bis(2-ethylhexyl)phthalate | 130 = | 12 | 24 | 61 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S007 | N | 8/18/2015 | 2 - 4 | SW8270C-SIM | PHTH | Butyl benzyl phthalate | 24 U | 12 | 24 | 100 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S007 | N | 8/18/2015 | 2 - 4 | SW8270C-SIM | PHTH | Diethyl phthalate | 24 U | 12 | 24 | 27 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S007 | N | 8/18/2015 | 2 - 4 | SW8270C-SIM | PHTH | Dimethyl phthalate | 24 U | 12 | 24 | 27 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S007 | N | 8/18/2015 | 2 - 4 | SW8270C-SIM | PHTH | Di-n-butyl phthalate | 24 U | 12 | 24 | 27 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S007 | N | 8/18/2015 | 2 - 4 | SW8270C-SIM | PHTH | Di-n-octyl phthalate | 24 U | 12 | 24 | 27 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S007 | N | 8/18/2015 | 2 - 4 | SW8260B | SVOC | Diisopropyl ether | 1.1 U | 1.1 | 11 | 10 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S007 | N | 8/18/2015 | 2 - 4 | SW8270C-SIM | SVOC | n-Nitrosodimethylamine | 24 U | 12 | 24 | 10 | µg/kg | X | RL |
| SO | BVBS1294 | BVBS1294S007 | N | 8/18/2015 | 2 - 4 | SW8260B | SVOC | tert-Amyl methyl ether | 1.1 U | 1.1 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S007 | N | 8/18/2015 | 2 - 4 | SW8260B | SVOC | tert-Butyl alcohol | 11 U | 11 | 56 | 50 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S007 | N | 8/18/2015 | 2 - 4 | SW8260B | SVOC | tert-Butyl ethyl ether | 1.1 U | 1.1 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S007 | N | 8/18/2015 | 2 - 4 | SW8260B | VOC | 1,1,1,2-Tetrachloroethane | 1.1 U | 1.1 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S007 | N | 8/18/2015 | 2 - 4 | SW8260B | VOC | 1,1,1-Trichloroethane | 1.1 U | 1.1 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S007 | N | 8/18/2015 | 2 - 4 | SW8260B | VOC | 1,1,2,2-Tetrachloroethane | 1.1 U | 1.1 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S007 | N | 8/18/2015 | 2 - 4 | SW8260B | VOC | 1,1,2-Trichloro-1,2,2-trifluoroethane | 2.2 U | 2.2 | 5.6 | 5 | µg/kg | | N |

APPENDIX G-1

**Analytical Data - August 2015 Post-ISCO Soil Sampling**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | FSP SL | Units | FSP Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1294 | BVBS1294S007 | N | 8/18/2015 | 2 - 4 | SW8260B | VOC | 1,1,2-Trichloroethane | 1.1 U | 1.1 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S007 | N | 8/18/2015 | 2 - 4 | SW8260B | VOC | 1,1-Dichloroethane | 1.1 U | 1.1 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S007 | N | 8/18/2015 | 2 - 4 | SW8260B | VOC | 1,1-Dichloroethene | 1.1 U | 1.1 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S007 | N | 8/18/2015 | 2 - 4 | SW8260B | VOC | 1,1-Dichloropropene | 1.1 U | 1.1 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S007 | N | 8/18/2015 | 2 - 4 | SW8260B | VOC | 1,2,3-Trichlorobenzene | 2.2 U | 2.2 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S007 | N | 8/18/2015 | 2 - 4 | SW8260B | VOC | 1,2,3-Trichloropropane | 2.2 U | 2.2 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S007 | N | 8/18/2015 | 2 - 4 | SW8260B | VOC | 1,2,4-Trichlorobenzene | 2.2 U | 2.2 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S007 | N | 8/18/2015 | 2 - 4 | SW8260B | VOC | 1,2,4-Trimethylbenzene | 1.1 U | 1.1 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S007 | N | 8/18/2015 | 2 - 4 | SW8260B | VOC | 1,2-Dibromo-3-chloropropane | 2.2 U | 2.2 | 11 | 10 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S007 | N | 8/18/2015 | 2 - 4 | SW8260B | VOC | 1,2-Dibromoethane (EDB) | 1.1 U | 1.1 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S007 | N | 8/18/2015 | 2 - 4 | SW8260B | VOC | 1,2-Dichlorobenzene | 1.1 U | 1.1 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S007 | N | 8/18/2015 | 2 - 4 | SW8260B | VOC | 1,2-Dichloroethane | 1.1 U | 1.1 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S007 | N | 8/18/2015 | 2 - 4 | SW8260B | VOC | 1,2-Dichloropropane | 1.1 U | 1.1 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S007 | N | 8/18/2015 | 2 - 4 | SW8260B | VOC | 1,3,5-Trimethylbenzene | 1.1 U | 1.1 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S007 | N | 8/18/2015 | 2 - 4 | SW8260B | VOC | 1,3-Dichlorobenzene | 1.1 U | 1.1 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S007 | N | 8/18/2015 | 2 - 4 | SW8260B | VOC | 1,3-Dichloropropane | 1.1 U | 1.1 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S007 | N | 8/18/2015 | 2 - 4 | SW8260B | VOC | 1,4-Dichlorobenzene | 1.1 U | 1.1 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S007 | N | 8/18/2015 | 2 - 4 | SW8260B | VOC | 2,2-Dichloropropane | 2.2 U | 2.2 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S007 | N | 8/18/2015 | 2 - 4 | SW8260B | VOC | 2-Butanone (MEK) | 5.6 U | 5.6 | 22 | 20 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S007 | N | 8/18/2015 | 2 - 4 | SW8260B | VOC | 2-Chloro-1,1,1-trifluoroethane | 2.2 U | 2.2 | 11 | 10 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S007 | N | 8/18/2015 | 2 - 4 | SW8260B | VOC | 2-Chloroethyl vinyl ether | 2.2 U | 2.2 | 11 | 10 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S007 | N | 8/18/2015 | 2 - 4 | SW8260B | VOC | 2-Chlorotoluene | 1.1 U | 1.1 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S007 | N | 8/18/2015 | 2 - 4 | SW8260B | VOC | 2-Hexanone | 5.6 U | 5.6 | 11 | 10 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S007 | N | 8/18/2015 | 2 - 4 | SW8260B | VOC | 4-Chlorotoluene | 1.1 U | 1.1 | 11 | 10 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S007 | N | 8/18/2015 | 2 - 4 | SW8260B | VOC | 4-Methyl-2-pentanone (MIBK) | 5.6 U | 5.6 | 11 | 10 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S007 | N | 8/18/2015 | 2 - 4 | SW8260B | VOC | Acetone | 11 J | 5.6 | 22 | 20 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S007 | N | 8/18/2015 | 2 - 4 | SW8260B | VOC | Benzene | 1.1 U | 1.1 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S007 | N | 8/18/2015 | 2 - 4 | SW8260B | VOC | Bromobenzene | 1.1 U | 1.1 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S007 | N | 8/18/2015 | 2 - 4 | SW8260B | VOC | Bromochloromethane | 1.1 U | 1.1 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S007 | N | 8/18/2015 | 2 - 4 | SW8260B | VOC | Bromodichloromethane | 1.1 U | 1.1 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S007 | N | 8/18/2015 | 2 - 4 | SW8260B | VOC | Bromoform | 2.2 U | 2.2 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S007 | N | 8/18/2015 | 2 - 4 | SW8260B | VOC | Bromomethane | 2.2 U | 2.2 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S007 | N | 8/18/2015 | 2 - 4 | SW8260B | VOC | Carbon tetrachloride | 1.1 U | 1.1 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S007 | N | 8/18/2015 | 2 - 4 | SW8260B | VOC | Chlorobenzene | 1.1 U | 1.1 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S007 | N | 8/18/2015 | 2 - 4 | SW8260B | VOC | Chloroethane | 2.2 U | 2.2 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S007 | N | 8/18/2015 | 2 - 4 | SW8260B | VOC | Chloromethane | 2.2 U | 2.2 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S007 | N | 8/18/2015 | 2 - 4 | SW8260B | VOC | Chlorotrifluoroethylene | 2.2 U | 2.2 | 11 | 10 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S007 | N | 8/18/2015 | 2 - 4 | SW8260B | VOC | cis-1,2-Dichloroethene | 1.1 U | 1.1 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S007 | N | 8/18/2015 | 2 - 4 | SW8260B | VOC | cis-1,3-Dichloropropene | 1.1 U | 1.1 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S007 | N | 8/18/2015 | 2 - 4 | SW8260B | VOC | Dibromochloromethane | 1.1 U | 1.1 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S007 | N | 8/18/2015 | 2 - 4 | SW8260B | VOC | Dibromomethane | 1.1 U | 1.1 | 5.6 | 5 | µg/kg | | N |

APPENDIX G-1

**Analytical Data - August 2015 Post-ISCO Soil Sampling**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | FSP SL | Units | FSP Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1294 | BVBS1294S007 | N | 8/18/2015 | 2 - 4 | SW8260B | VOC | Dichlorodifluoromethane | 2.2 U | 2.2 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S007 | N | 8/18/2015 | 2 - 4 | SW8260B | VOC | Ethylbenzene | 1.1 U | 1.1 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S007 | N | 8/18/2015 | 2 - 4 | SW8260B | VOC | Hexachlorobutadiene | 2.2 U | 2.2 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S007 | N | 8/18/2015 | 2 - 4 | SW8260B | VOC | Isopropylbenzene | 1.1 U | 1.1 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S007 | N | 8/18/2015 | 2 - 4 | SW8260B | VOC | m,p-Xylenes | 2.2 U | 2.2 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S007 | N | 8/18/2015 | 2 - 4 | SW8260B | VOC | Methylene chloride | 2.2 U | 2.2 | 11 | 10 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S007 | N | 8/18/2015 | 2 - 4 | SW8260B | VOC | Methyl-tert-butyl Ether (MTBE) | 1.1 U | 1.1 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S007 | N | 8/18/2015 | 2 - 4 | SW8260B | VOC | n-butylbenzene | 1.1 U | 1.1 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S007 | N | 8/18/2015 | 2 - 4 | SW8260B | VOC | n-Propylbenzene | 1.1 U | 1.1 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S007 | N | 8/18/2015 | 2 - 4 | SW8260B | VOC | o-Xylene | 1.1 U | 1.1 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S007 | N | 8/18/2015 | 2 - 4 | SW8260B | VOC | p-Isopropyltoluene | 1.1 U | 1.1 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S007 | N | 8/18/2015 | 2 - 4 | SW8260B | VOC | sec-Butylbenzene | 1.1 U | 1.1 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S007 | N | 8/18/2015 | 2 - 4 | SW8260B | VOC | Styrene | 1.1 U | 1.1 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S007 | N | 8/18/2015 | 2 - 4 | SW8260B | VOC | tert-Butylbenzene | 1.1 U | 1.1 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S007 | N | 8/18/2015 | 2 - 4 | SW8260B | VOC | Tetrachloroethene | 1.1 U | 1.1 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S007 | N | 8/18/2015 | 2 - 4 | SW8260B | VOC | Toluene | 1.1 U | 1.1 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S007 | N | 8/18/2015 | 2 - 4 | SW8260B | VOC | trans-1,2-Dichloroethene | 1.1 U | 1.1 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S007 | N | 8/18/2015 | 2 - 4 | SW8260B | VOC | trans-1,3-Dichloropropene | 1.1 U | 1.1 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S007 | N | 8/18/2015 | 2 - 4 | SW8260B | VOC | Trichloroethene | 1.1 U | 1.1 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S007 | N | 8/18/2015 | 2 - 4 | SW8260B | VOC | Trichlorofluoromethane | 2.2 U | 2.2 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S007 | N | 8/18/2015 | 2 - 4 | SW8260B | VOC | Trichloromethane (Chloroform) | 1.1 U | 1.1 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S007 | N | 8/18/2015 | 2 - 4 | SW8260B | VOC | Vinyl chloride | 2.2 U | 2.2 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D007 | FD | 8/18/2015 | 2 - 4 | SW8015B | HC | Diesel Range Organics (C12-C14) | 11000 = | 2900 | 5800 | 5000 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294D007 | FD | 8/18/2015 | 2 - 4 | SW8015B | HC | Diesel Range Organics (C15-C20) | 13000 = | 2900 | 5800 | 5000 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294D007 | FD | 8/18/2015 | 2 - 4 | SW8015B | HC | Diesel Range Organics (C21-C30) | 5800 U | 2900 | 5800 | 5000 | µg/kg | X | N |
| SO | BVBS1294 | BVBS1294D007 | FD | 8/18/2015 | 2 - 4 | SW8015B | HC | Diesel Range Organics (C8-C11) | 5800 U | 2900 | 5800 | 1000 | µg/kg | X | RL |
| SO | BVBS1294 | BVBS1294D007 | FD | 8/18/2015 | 2 - 4 | SW8015B | HC | GRO (C4-C12) | 1000 UJ | 510 | 1000 | 1000 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D007 | FD | 8/18/2015 | 2 - 4 | SW8015B | HC | ORO (C31-C40) | 12000 U | 5800 | 12000 | 10000 | µg/kg | X | N |
| SO | BVBS1294 | BVBS1294D007 | FD | 8/18/2015 | 2 - 4 | SW8015B | HC | TOTAL EFH(C8-C40) | 29000 = | 2900 | 5800 | 10000 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294D007 | FD | 8/18/2015 | 2 - 4 | SW8270C-SIM | PAH | 1-Methylnaphthalene | 12 U | 5.8 | 12 | 2.5 | µg/kg | X | RL |
| SO | BVBS1294 | BVBS1294D007 | FD | 8/18/2015 | 2 - 4 | SW8270C-SIM | PAH | 2-Methylnaphthalene | 12 U | 5.8 | 12 | 2.5 | µg/kg | X | RL |
| SO | BVBS1294 | BVBS1294D007 | FD | 8/18/2015 | 2 - 4 | SW8270C-SIM | PAH | Acenaphthene | 12 U | 5.8 | 12 | 2.5 | µg/kg | X | RL |
| SO | BVBS1294 | BVBS1294D007 | FD | 8/18/2015 | 2 - 4 | SW8270C-SIM | PAH | Acenaphthylene | 12 U | 5.8 | 12 | 2.5 | µg/kg | X | RL |
| SO | BVBS1294 | BVBS1294D007 | FD | 8/18/2015 | 2 - 4 | SW8270C-SIM | PAH | Anthracene | 12 U | 5.8 | 12 | 2.5 | µg/kg | X | RL |
| SO | BVBS1294 | BVBS1294D007 | FD | 8/18/2015 | 2 - 4 | SW8270C-SIM | PAH | Benzo(a)anthracene | 12 U | 5.8 | 12 | NC | µg/kg | | NC |
| SO | BVBS1294 | BVBS1294D007 | FD | 8/18/2015 | 2 - 4 | SW8270C-SIM | PAH | Benzo(a)pyrene | 12 U | 5.8 | 12 | NC | µg/kg | | NC |
| SO | BVBS1294 | BVBS1294D007 | FD | 8/18/2015 | 2 - 4 | SW8270C-SIM | PAH | Benzo(b)fluoranthene | 12 U | 5.8 | 12 | NC | µg/kg | | NC |
| SO | BVBS1294 | BVBS1294D007 | FD | 8/18/2015 | 2 - 4 | SW8270C-SIM | PAH | Benzo(ghi)perylene | 6 J | 5.8 | 12 | 2.5 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294D007 | FD | 8/18/2015 | 2 - 4 | SW8270C-SIM | PAH | Benzo(k)fluoranthene | 12 U | 5.8 | 12 | NC | µg/kg | | NC |
| SO | BVBS1294 | BVBS1294D007 | FD | 8/18/2015 | 2 - 4 | SW8270C-SIM | PAH | Chrysene | 12 U | 5.8 | 12 | NC | µg/kg | | NC |
| SO | BVBS1294 | BVBS1294D007 | FD | 8/18/2015 | 2 - 4 | SW8270C-SIM | PAH | Dibenzo(a,h)anthracene | 12 U | 5.8 | 12 | NC | µg/kg | | NC |

APPENDIX G-1

**Analytical Data - August 2015 Post-ISCO Soil Sampling**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | FSP SL | Units | FSP Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1294 | BVBS1294D007 | FD | 8/18/2015 | 2 - 4 | SW8270C-SIM | PAH | Fluoranthene | 14 = | 5.8 | 12 | 5.2 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294D007 | FD | 8/18/2015 | 2 - 4 | SW8270C-SIM | PAH | Fluorene | 12 U | 5.8 | 12 | 3.8 | µg/kg | X | RL |
| SO | BVBS1294 | BVBS1294D007 | FD | 8/18/2015 | 2 - 4 | SW8270C-SIM | PAH | Indeno(1,2,3-cd)pyrene | 12 U | 5.8 | 12 | NC | µg/kg | | NC |
| SO | BVBS1294 | BVBS1294D007 | FD | 8/18/2015 | 2 - 4 | SW8270C-SIM | PAH | Naphthalene | 12 U | 5.8 | 12 | 3.6 | µg/kg | X | RL |
| SO | BVBS1294 | BVBS1294D007 | FD | 8/18/2015 | 2 - 4 | SW8270C-SIM | PAH | PAHTEQM | 0 U | | | 4.47 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D007 | FD | 8/18/2015 | 2 - 4 | SW8270C-SIM | PAH | Phenanthrene | 12 U | 5.8 | 12 | 3.9 | µg/kg | X | RL |
| SO | BVBS1294 | BVBS1294D007 | FD | 8/18/2015 | 2 - 4 | SW8270C-SIM | PAH | Pyrene | 17 = | 5.8 | 12 | 5.6 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294D007 | FD | 8/18/2015 | 2 - 4 | SW8270C-SIM | PHTH | Bis(2-ethylhexyl)phthalate | 97 = | 12 | 23 | 61 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294D007 | FD | 8/18/2015 | 2 - 4 | SW8270C-SIM | PHTH | Butyl benzyl phthalate | 23 U | 12 | 23 | 100 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D007 | FD | 8/18/2015 | 2 - 4 | SW8270C-SIM | PHTH | Diethyl phthalate | 23 U | 12 | 23 | 27 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D007 | FD | 8/18/2015 | 2 - 4 | SW8270C-SIM | PHTH | Dimethyl phthalate | 23 U | 12 | 23 | 27 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D007 | FD | 8/18/2015 | 2 - 4 | SW8270C-SIM | PHTH | Di-n-butyl phthalate | 23 U | 12 | 23 | 27 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D007 | FD | 8/18/2015 | 2 - 4 | SW8270C-SIM | PHTH | Di-n-octyl phthalate | 23 U | 12 | 23 | 27 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D007 | FD | 8/18/2015 | 2 - 4 | SW8260B | SVOC | Diisopropyl ether | 0.99 U | 0.99 | 9.9 | 10 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D007 | FD | 8/18/2015 | 2 - 4 | SW8270C-SIM | SVOC | n-Nitrosodimethylamine | 23 U | 12 | 23 | 10 | µg/kg | X | RL |
| SO | BVBS1294 | BVBS1294D007 | FD | 8/18/2015 | 2 - 4 | SW8260B | SVOC | tert-Amyl methyl ether | 0.99 U | 0.99 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D007 | FD | 8/18/2015 | 2 - 4 | SW8260B | SVOC | tert-Butyl alcohol | 9.9 U | 9.9 | 49 | 50 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D007 | FD | 8/18/2015 | 2 - 4 | SW8260B | SVOC | tert-Butyl ethyl ether | 0.99 U | 0.99 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D007 | FD | 8/18/2015 | 2 - 4 | SW8260B | VOC | 1,1,1,2-Tetrachloroethane | 0.99 U | 0.99 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D007 | FD | 8/18/2015 | 2 - 4 | SW8260B | VOC | 1,1,1-Trichloroethane | 0.99 U | 0.99 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D007 | FD | 8/18/2015 | 2 - 4 | SW8260B | VOC | 1,1,2,2-Tetrachloroethane | 0.99 U | 0.99 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D007 | FD | 8/18/2015 | 2 - 4 | SW8260B | VOC | 1,1,2-Trichloro-1,2,2-trifluoroethane | 2 U | 2 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D007 | FD | 8/18/2015 | 2 - 4 | SW8260B | VOC | 1,1,2-Trichloroethane | 0.99 U | 0.99 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D007 | FD | 8/18/2015 | 2 - 4 | SW8260B | VOC | 1,1-Dichloroethane | 0.99 U | 0.99 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D007 | FD | 8/18/2015 | 2 - 4 | SW8260B | VOC | 1,1-Dichloroethene | 0.99 U | 0.99 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D007 | FD | 8/18/2015 | 2 - 4 | SW8260B | VOC | 1,1-Dichloropropene | 0.99 U | 0.99 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D007 | FD | 8/18/2015 | 2 - 4 | SW8260B | VOC | 1,2,3-Trichlorobenzene | 2 U | 2 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D007 | FD | 8/18/2015 | 2 - 4 | SW8260B | VOC | 1,2,3-Trichloropropane | 2 U | 2 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D007 | FD | 8/18/2015 | 2 - 4 | SW8260B | VOC | 1,2,4-Trichlorobenzene | 2 U | 2 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D007 | FD | 8/18/2015 | 2 - 4 | SW8260B | VOC | 1,2,4-Trimethylbenzene | 0.99 U | 0.99 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D007 | FD | 8/18/2015 | 2 - 4 | SW8260B | VOC | 1,2-Dibromo-3-chloropropane | 2 U | 2 | 9.9 | 10 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D007 | FD | 8/18/2015 | 2 - 4 | SW8260B | VOC | 1,2-Dibromoethane (EDB) | 0.99 U | 0.99 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D007 | FD | 8/18/2015 | 2 - 4 | SW8260B | VOC | 1,2-Dichlorobenzene | 0.99 U | 0.99 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D007 | FD | 8/18/2015 | 2 - 4 | SW8260B | VOC | 1,2-Dichloroethane | 0.99 U | 0.99 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D007 | FD | 8/18/2015 | 2 - 4 | SW8260B | VOC | 1,2-Dichloropropane | 0.99 U | 0.99 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D007 | FD | 8/18/2015 | 2 - 4 | SW8260B | VOC | 1,3,5-Trimethylbenzene | 0.99 U | 0.99 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D007 | FD | 8/18/2015 | 2 - 4 | SW8260B | VOC | 1,3-Dichlorobenzene | 0.99 U | 0.99 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D007 | FD | 8/18/2015 | 2 - 4 | SW8260B | VOC | 1,3-Dichloropropane | 0.99 U | 0.99 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D007 | FD | 8/18/2015 | 2 - 4 | SW8260B | VOC | 1,4-Dichlorobenzene | 0.99 U | 0.99 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D007 | FD | 8/18/2015 | 2 - 4 | SW8260B | VOC | 2,2-Dichloropropane | 2 U | 2 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D007 | FD | 8/18/2015 | 2 - 4 | SW8260B | VOC | 2-Butanone (MEK) | 4.9 U | 4.9 | 20 | 20 | µg/kg | | N |

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**Analytical Data - August 2015 Post-ISCO Soil Sampling**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | FSP SL | Units | FSP Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1294 | BVBS1294D007 | FD | 8/18/2015 | 2 - 4 | SW8260B | VOC | 2-Chloro-1,1,1-trifluoroethane | 2 U | 2 | 9.9 | 10 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D007 | FD | 8/18/2015 | 2 - 4 | SW8260B | VOC | 2-Chloroethyl vinyl ether | 2 U | 2 | 9.9 | 10 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D007 | FD | 8/18/2015 | 2 - 4 | SW8260B | VOC | 2-Chlorotoluene | 0.99 U | 0.99 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D007 | FD | 8/18/2015 | 2 - 4 | SW8260B | VOC | 2-Hexanone | 4.9 U | 4.9 | 9.9 | 10 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D007 | FD | 8/18/2015 | 2 - 4 | SW8260B | VOC | 4-Chlorotoluene | 0.99 U | 0.99 | 9.9 | 10 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D007 | FD | 8/18/2015 | 2 - 4 | SW8260B | VOC | 4-Methyl-2-pentanone (MIBK) | 4.9 U | 4.9 | 9.9 | 10 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D007 | FD | 8/18/2015 | 2 - 4 | SW8260B | VOC | Acetone | 16 J | 4.9 | 20 | 20 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D007 | FD | 8/18/2015 | 2 - 4 | SW8260B | VOC | Benzene | 2.1 J | 0.99 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D007 | FD | 8/18/2015 | 2 - 4 | SW8260B | VOC | Bromobenzene | 0.99 U | 0.99 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D007 | FD | 8/18/2015 | 2 - 4 | SW8260B | VOC | Bromochloromethane | 0.99 U | 0.99 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D007 | FD | 8/18/2015 | 2 - 4 | SW8260B | VOC | Bromodichloromethane | 0.99 U | 0.99 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D007 | FD | 8/18/2015 | 2 - 4 | SW8260B | VOC | Bromoform | 2 U | 2 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D007 | FD | 8/18/2015 | 2 - 4 | SW8260B | VOC | Bromomethane | 2 U | 2 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D007 | FD | 8/18/2015 | 2 - 4 | SW8260B | VOC | Carbon tetrachloride | 0.99 U | 0.99 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D007 | FD | 8/18/2015 | 2 - 4 | SW8260B | VOC | Chlorobenzene | 0.99 U | 0.99 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D007 | FD | 8/18/2015 | 2 - 4 | SW8260B | VOC | Chloroethane | 2 U | 2 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D007 | FD | 8/18/2015 | 2 - 4 | SW8260B | VOC | Chloromethane | 2 U | 2 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D007 | FD | 8/18/2015 | 2 - 4 | SW8260B | VOC | Chlorotrifluoroethylene | 2 U | 2 | 9.9 | 10 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D007 | FD | 8/18/2015 | 2 - 4 | SW8260B | VOC | cis-1,2-Dichloroethene | 0.99 U | 0.99 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D007 | FD | 8/18/2015 | 2 - 4 | SW8260B | VOC | cis-1,3-Dichloropropene | 0.99 U | 0.99 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D007 | FD | 8/18/2015 | 2 - 4 | SW8260B | VOC | Dibromochloromethane | 0.99 U | 0.99 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D007 | FD | 8/18/2015 | 2 - 4 | SW8260B | VOC | Dibromomethane | 0.99 U | 0.99 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D007 | FD | 8/18/2015 | 2 - 4 | SW8260B | VOC | Dichlorodifluoromethane | 2 U | 2 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D007 | FD | 8/18/2015 | 2 - 4 | SW8260B | VOC | Ethylbenzene | 0.99 U | 0.99 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D007 | FD | 8/18/2015 | 2 - 4 | SW8260B | VOC | Hexachlorobutadiene | 2 U | 2 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D007 | FD | 8/18/2015 | 2 - 4 | SW8260B | VOC | Isopropylbenzene | 0.99 U | 0.99 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D007 | FD | 8/18/2015 | 2 - 4 | SW8260B | VOC | m,p-Xylenes | 2 U | 2 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D007 | FD | 8/18/2015 | 2 - 4 | SW8260B | VOC | Methylene chloride | 2 U | 2 | 9.9 | 10 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D007 | FD | 8/18/2015 | 2 - 4 | SW8260B | VOC | Methyl-tert-butyl Ether (MTBE) | 0.99 U | 0.99 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D007 | FD | 8/18/2015 | 2 - 4 | SW8260B | VOC | n-butylbenzene | 0.99 U | 0.99 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D007 | FD | 8/18/2015 | 2 - 4 | SW8260B | VOC | n-Propylbenzene | 0.99 U | 0.99 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D007 | FD | 8/18/2015 | 2 - 4 | SW8260B | VOC | o-Xylene | 0.99 U | 0.99 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D007 | FD | 8/18/2015 | 2 - 4 | SW8260B | VOC | p-Isopropyltoluene | 0.99 U | 0.99 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D007 | FD | 8/18/2015 | 2 - 4 | SW8260B | VOC | sec-Butylbenzene | 0.99 U | 0.99 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D007 | FD | 8/18/2015 | 2 - 4 | SW8260B | VOC | Styrene | 0.99 U | 0.99 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D007 | FD | 8/18/2015 | 2 - 4 | SW8260B | VOC | tert-Butylbenzene | 0.99 U | 0.99 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D007 | FD | 8/18/2015 | 2 - 4 | SW8260B | VOC | Tetrachloroethene | 0.99 U | 0.99 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D007 | FD | 8/18/2015 | 2 - 4 | SW8260B | VOC | Toluene | 0.99 U | 0.99 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D007 | FD | 8/18/2015 | 2 - 4 | SW8260B | VOC | trans-1,2-Dichloroethene | 0.99 U | 0.99 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D007 | FD | 8/18/2015 | 2 - 4 | SW8260B | VOC | trans-1,3-Dichloropropene | 0.99 U | 0.99 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D007 | FD | 8/18/2015 | 2 - 4 | SW8260B | VOC | Trichloroethene | 0.99 U | 0.99 | 4.9 | 5 | µg/kg | | N |

APPENDIX G-1

**Analytical Data - August 2015 Post-ISCO Soil Sampling**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | FSP SL | Units | FSP Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1294 | BVBS1294D007 | FD | 8/18/2015 | 2 - 4 | SW8260B | VOC | Trichlorofluoromethane | 2 U | 2 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D007 | FD | 8/18/2015 | 2 - 4 | SW8260B | VOC | Trichloromethane (Chloroform) | 0.99 U | 0.99 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294D007 | FD | 8/18/2015 | 2 - 4 | SW8260B | VOC | Vinyl chloride | 2 U | 2 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S008 | N | 8/18/2015 | 6 - 7 | SW8015B | HC | Diesel Range Organics (C12-C14) | 7600000 = | 58000 | 120000 | 5000 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S008 | N | 8/18/2015 | 6 - 7 | SW8015B | HC | Diesel Range Organics (C15-C20) | 1600000 = | 58000 | 120000 | 5000 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S008 | N | 8/18/2015 | 6 - 7 | SW8015B | HC | Diesel Range Organics (C21-C30) | 120000 U | 58000 | 120000 | 5000 | µg/kg | X | RL |
| SO | BVBS1294 | BVBS1294S008 | N | 8/18/2015 | 6 - 7 | SW8015B | HC | Diesel Range Organics (C8-C11) | 1600000 = | 58000 | 120000 | 1000 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S008 | N | 8/18/2015 | 6 - 7 | SW8015B | HC | GRO (C4-C12) | 1900000 = | 11000 | 21000 | 1000 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S008 | N | 8/18/2015 | 6 - 7 | SW8015B | HC | ORO (C31-C40) | 230000 U | 120000 | 230000 | 10000 | µg/kg | X | RL |
| SO | BVBS1294 | BVBS1294S008 | N | 8/18/2015 | 6 - 7 | SW8015B | HC | TOTAL EFH(C8-C40) | 11000000 = | 58000 | 120000 | 10000 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S008 | N | 8/18/2015 | 6 - 7 | SW8270C-SIM | PAH | 1-Methylnaphthalene | 12 U | 5.8 | 12 | 2.5 | µg/kg | X | RL |
| SO | BVBS1294 | BVBS1294S008 | N | 8/18/2015 | 6 - 7 | SW8270C-SIM | PAH | 2-Methylnaphthalene | 12 U | 5.8 | 12 | 2.5 | µg/kg | X | RL |
| SO | BVBS1294 | BVBS1294S008 | N | 8/18/2015 | 6 - 7 | SW8270C-SIM | PAH | Acenaphthene | 12 U | 5.8 | 12 | 2.5 | µg/kg | X | RL |
| SO | BVBS1294 | BVBS1294S008 | N | 8/18/2015 | 6 - 7 | SW8270C-SIM | PAH | Acenaphthylene | 12 U | 5.8 | 12 | 2.5 | µg/kg | X | RL |
| SO | BVBS1294 | BVBS1294S008 | N | 8/18/2015 | 6 - 7 | SW8270C-SIM | PAH | Anthracene | 63 = | 5.8 | 12 | 2.5 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S008 | N | 8/18/2015 | 6 - 7 | SW8270C-SIM | PAH | Benzo(a)anthracene | 45 = | 5.8 | 12 | NC | µg/kg | | NC |
| SO | BVBS1294 | BVBS1294S008 | N | 8/18/2015 | 6 - 7 | SW8270C-SIM | PAH | Benzo(a)pyrene | 59 = | 5.8 | 12 | NC | µg/kg | | NC |
| SO | BVBS1294 | BVBS1294S008 | N | 8/18/2015 | 6 - 7 | SW8270C-SIM | PAH | Benzo(b)fluoranthene | 66 = | 5.8 | 12 | NC | µg/kg | | NC |
| SO | BVBS1294 | BVBS1294S008 | N | 8/18/2015 | 6 - 7 | SW8270C-SIM | PAH | Benzo(ghi)perylene | 78 = | 5.8 | 12 | 2.5 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S008 | N | 8/18/2015 | 6 - 7 | SW8270C-SIM | PAH | Benzo(k)fluoranthene | 12 = | 5.8 | 12 | NC | µg/kg | | NC |
| SO | BVBS1294 | BVBS1294S008 | N | 8/18/2015 | 6 - 7 | SW8270C-SIM | PAH | Chrysene | 41 = | 5.8 | 12 | NC | µg/kg | | NC |
| SO | BVBS1294 | BVBS1294S008 | N | 8/18/2015 | 6 - 7 | SW8270C-SIM | PAH | Dibenzo(a,h)anthracene | 12 U | 5.8 | 12 | NC | µg/kg | | NC |
| SO | BVBS1294 | BVBS1294S008 | N | 8/18/2015 | 6 - 7 | SW8270C-SIM | PAH | Fluoranthene | 290 = | 5.8 | 12 | 5.2 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S008 | N | 8/18/2015 | 6 - 7 | SW8270C-SIM | PAH | Fluorene | 110 = | 5.8 | 12 | 3.8 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S008 | N | 8/18/2015 | 6 - 7 | SW8270C-SIM | PAH | Indeno(1,2,3-cd)pyrene | 37 = | 5.8 | 12 | NC | µg/kg | | NC |
| SO | BVBS1294 | BVBS1294S008 | N | 8/18/2015 | 6 - 7 | SW8270C-SIM | PAH | Naphthalene | 140 = | 5.8 | 12 | 3.6 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S008 | N | 8/18/2015 | 6 - 7 | SW8270C-SIM | PAH | PAHTEQM | 75.41 = | | | 4.47 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S008 | N | 8/18/2015 | 6 - 7 | SW8270C-SIM | PAH | Phenanthrene | 230 = | 5.8 | 12 | 3.9 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S008 | N | 8/18/2015 | 6 - 7 | SW8270C-SIM | PAH | Pyrene | 410 = | 5.8 | 12 | 5.6 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S008 | N | 8/18/2015 | 6 - 7 | SW8270C-SIM | PHTH | Bis(2-ethylhexyl)phthalate | 1300 = | 12 | 23 | 61 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S008 | N | 8/18/2015 | 6 - 7 | SW8270C-SIM | PHTH | Butyl benzyl phthalate | 23 U | 12 | 23 | 100 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S008 | N | 8/18/2015 | 6 - 7 | SW8270C-SIM | PHTH | Diethyl phthalate | 23 U | 12 | 23 | 27 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S008 | N | 8/18/2015 | 6 - 7 | SW8270C-SIM | PHTH | Dimethyl phthalate | 23 U | 12 | 23 | 27 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S008 | N | 8/18/2015 | 6 - 7 | SW8270C-SIM | PHTH | Di-n-butyl phthalate | 23 U | 12 | 23 | 27 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S008 | N | 8/18/2015 | 6 - 7 | SW8270C-SIM | PHTH | Di-n-octyl phthalate | 23 U | 12 | 23 | 27 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S008 | N | 8/18/2015 | 6 - 7 | SW8260B | SVOC | Diisopropyl ether | 1.1 UJ | 1.1 | 11 | 10 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S008 | N | 8/18/2015 | 6 - 7 | SW8270C-SIM | SVOC | n-Nitrosodimethylamine | 23 U | 12 | 23 | 10 | µg/kg | X | RL |
| SO | BVBS1294 | BVBS1294S008 | N | 8/18/2015 | 6 - 7 | SW8260B | SVOC | tert-Amyl methyl ether | 1.1 UJ | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S008 | N | 8/18/2015 | 6 - 7 | SW8260B | SVOC | tert-Butyl alcohol | 11 UJ | 11 | 55 | 50 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S008 | N | 8/18/2015 | 6 - 7 | SW8260B | SVOC | tert-Butyl ethyl ether | 1.1 UJ | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S008 | N | 8/18/2015 | 6 - 7 | SW8260B | VOC | 1,1,1,2-Tetrachloroethane | 1.1 UJ | 1.1 | 5.5 | 5 | µg/kg | | N |

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**Analytical Data - August 2015 Post-ISCO Soil Sampling**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | FSP SL | Units | FSP Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1294 | BVBS1294S008 | N | 8/18/2015 | 6 - 7 | SW8260B | VOC | 1,1,1-Trichloroethane | 1.1 UJ | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S008 | N | 8/18/2015 | 6 - 7 | SW8260B | VOC | 1,1,2,2-Tetrachloroethane | 1.1 UJ | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S008 | N | 8/18/2015 | 6 - 7 | SW8260B | VOC | 1,1,2-Trichloro-1,2,2-trifluoroethane | 2.2 UJ | 2.2 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S008 | N | 8/18/2015 | 6 - 7 | SW8260B | VOC | 1,1,2-Trichloroethane | 1.1 UJ | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S008 | N | 8/18/2015 | 6 - 7 | SW8260B | VOC | 1,1-Dichloroethane | 1.1 UJ | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S008 | N | 8/18/2015 | 6 - 7 | SW8260B | VOC | 1,1-Dichloroethene | 1.1 UJ | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S008 | N | 8/18/2015 | 6 - 7 | SW8260B | VOC | 1,1-Dichloropropene | 1.1 UJ | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S008 | N | 8/18/2015 | 6 - 7 | SW8260B | VOC | 1,2,3-Trichlorobenzene | 2.2 UJ | 2.2 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S008 | N | 8/18/2015 | 6 - 7 | SW8260B | VOC | 1,2,3-Trichloropropane | 2.2 UJ | 2.2 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S008 | N | 8/18/2015 | 6 - 7 | SW8260B | VOC | 1,2,4-Trichlorobenzene | 2.2 UJ | 2.2 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S008 | N | 8/18/2015 | 6 - 7 | SW8260B | VOC | 1,2,4-Trimethylbenzene | 1.1 UJ | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S008 | N | 8/18/2015 | 6 - 7 | SW8260B | VOC | 1,2-Dibromo-3-chloropropane | 2.2 UJ | 2.2 | 11 | 10 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S008 | N | 8/18/2015 | 6 - 7 | SW8260B | VOC | 1,2-Dibromoethane (EDB) | 1.1 UJ | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S008 | N | 8/18/2015 | 6 - 7 | SW8260B | VOC | 1,2-Dichlorobenzene | 1.1 UJ | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S008 | N | 8/18/2015 | 6 - 7 | SW8260B | VOC | 1,2-Dichloroethane | 1.1 UJ | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S008 | N | 8/18/2015 | 6 - 7 | SW8260B | VOC | 1,2-Dichloropropane | 1.1 UJ | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S008 | N | 8/18/2015 | 6 - 7 | SW8260B | VOC | 1,3,5-Trimethylbenzene | 4.4 J | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S008 | N | 8/18/2015 | 6 - 7 | SW8260B | VOC | 1,3-Dichlorobenzene | 1.1 UJ | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S008 | N | 8/18/2015 | 6 - 7 | SW8260B | VOC | 1,3-Dichloropropane | 1.1 UJ | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S008 | N | 8/18/2015 | 6 - 7 | SW8260B | VOC | 1,4-Dichlorobenzene | 1.1 UJ | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S008 | N | 8/18/2015 | 6 - 7 | SW8260B | VOC | 2,2-Dichloropropane | 2.2 UJ | 2.2 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S008 | N | 8/18/2015 | 6 - 7 | SW8260B | VOC | 2-Butanone (MEK) | 8.6 J | 5.5 | 22 | 20 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S008 | N | 8/18/2015 | 6 - 7 | SW8260B | VOC | 2-Chloro-1,1,1-trifluoroethane | 2.2 UJ | 2.2 | 11 | 10 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S008 | N | 8/18/2015 | 6 - 7 | SW8260B | VOC | 2-Chloroethyl vinyl ether | 2.2 UJ | 2.2 | 11 | 10 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S008 | N | 8/18/2015 | 6 - 7 | SW8260B | VOC | 2-Chlorotoluene | 1.1 UJ | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S008 | N | 8/18/2015 | 6 - 7 | SW8260B | VOC | 2-Hexanone | 5.5 UJ | 5.5 | 11 | 10 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S008 | N | 8/18/2015 | 6 - 7 | SW8260B | VOC | 4-Chlorotoluene | 1.1 UJ | 1.1 | 11 | 10 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S008 | N | 8/18/2015 | 6 - 7 | SW8260B | VOC | 4-Methyl-2-pentanone (MIBK) | 5.5 UJ | 5.5 | 11 | 10 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S008 | N | 8/18/2015 | 6 - 7 | SW8260B | VOC | Acetone | 47 J | 5.5 | 22 | 20 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S008 | N | 8/18/2015 | 6 - 7 | SW8260B | VOC | Benzene | 1.1 UJ | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S008 | N | 8/18/2015 | 6 - 7 | SW8260B | VOC | Bromobenzene | 1.1 UJ | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S008 | N | 8/18/2015 | 6 - 7 | SW8260B | VOC | Bromochloromethane | 1.1 UJ | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S008 | N | 8/18/2015 | 6 - 7 | SW8260B | VOC | Bromodichloromethane | 1.1 UJ | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S008 | N | 8/18/2015 | 6 - 7 | SW8260B | VOC | Bromoform | 2.2 UJ | 2.2 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S008 | N | 8/18/2015 | 6 - 7 | SW8260B | VOC | Bromomethane | 2.2 UJ | 2.2 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S008 | N | 8/18/2015 | 6 - 7 | SW8260B | VOC | Carbon tetrachloride | 1.1 UJ | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S008 | N | 8/18/2015 | 6 - 7 | SW8260B | VOC | Chlorobenzene | 1.1 UJ | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S008 | N | 8/18/2015 | 6 - 7 | SW8260B | VOC | Chloroethane | 2.2 UJ | 2.2 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S008 | N | 8/18/2015 | 6 - 7 | SW8260B | VOC | Chloromethane | 2.2 UJ | 2.2 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S008 | N | 8/18/2015 | 6 - 7 | SW8260B | VOC | Chlorotrifluoroethylene | 2.2 UJ | 2.2 | 11 | 10 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S008 | N | 8/18/2015 | 6 - 7 | SW8260B | VOC | cis-1,2-Dichloroethene | 1.1 UJ | 1.1 | 5.5 | 5 | µg/kg | | N |

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**Analytical Data - August 2015 Post-ISCO Soil Sampling**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | FSP SL | Units | FSP Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1294 | BVBS1294S008 | N | 8/18/2015 | 6 - 7 | SW8260B | VOC | cis-1,3-Dichloropropene | 1.1 UJ | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S008 | N | 8/18/2015 | 6 - 7 | SW8260B | VOC | Dibromochloromethane | 1.1 UJ | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S008 | N | 8/18/2015 | 6 - 7 | SW8260B | VOC | Dibromomethane | 1.1 UJ | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S008 | N | 8/18/2015 | 6 - 7 | SW8260B | VOC | Dichlorodifluoromethane | 2.2 UJ | 2.2 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S008 | N | 8/18/2015 | 6 - 7 | SW8260B | VOC | Ethylbenzene | 7.5 J | 1.1 | 5.5 | 5 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S008 | N | 8/18/2015 | 6 - 7 | SW8260B | VOC | Hexachlorobutadiene | 2.2 UJ | 2.2 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S008 | N | 8/18/2015 | 6 - 7 | SW8260B | VOC | Isopropylbenzene | 8.3 J | 1.1 | 5.5 | 5 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S008 | N | 8/18/2015 | 6 - 7 | SW8260B | VOC | m,p-Xylenes | 2.3 J | 2.2 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S008 | N | 8/18/2015 | 6 - 7 | SW8260B | VOC | Methylene chloride | 2.2 UJ | 2.2 | 11 | 10 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S008 | N | 8/18/2015 | 6 - 7 | SW8260B | VOC | Methyl-tert-butyl Ether (MTBE) | 1.1 UJ | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S008 | N | 8/18/2015 | 6 - 7 | SW8260B | VOC | n-butylbenzene | 5.4 J | 1.1 | 5.5 | 5 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S008 | N | 8/18/2015 | 6 - 7 | SW8260B | VOC | n-Propylbenzene | 20 J | 1.1 | 5.5 | 5 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S008 | N | 8/18/2015 | 6 - 7 | SW8260B | VOC | o-Xylene | 4.2 J | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S008 | N | 8/18/2015 | 6 - 7 | SW8260B | VOC | p-Isopropyltoluene | 2.6 J | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S008 | N | 8/18/2015 | 6 - 7 | SW8260B | VOC | sec-Butylbenzene | 21 J | 1.1 | 5.5 | 5 | µg/kg | X | Y |
| SO | BVBS1294 | BVBS1294S008 | N | 8/18/2015 | 6 - 7 | SW8260B | VOC | Styrene | 1.1 UJ | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S008 | N | 8/18/2015 | 6 - 7 | SW8260B | VOC | tert-Butylbenzene | 1.8 J | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S008 | N | 8/18/2015 | 6 - 7 | SW8260B | VOC | Tetrachloroethene | 1.1 UJ | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S008 | N | 8/18/2015 | 6 - 7 | SW8260B | VOC | Toluene | 1.1 UJ | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S008 | N | 8/18/2015 | 6 - 7 | SW8260B | VOC | trans-1,2-Dichloroethene | 1.1 UJ | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S008 | N | 8/18/2015 | 6 - 7 | SW8260B | VOC | trans-1,3-Dichloropropene | 1.1 UJ | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S008 | N | 8/18/2015 | 6 - 7 | SW8260B | VOC | Trichloroethene | 1.1 UJ | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S008 | N | 8/18/2015 | 6 - 7 | SW8260B | VOC | Trichlorofluoromethane | 2.2 UJ | 2.2 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S008 | N | 8/18/2015 | 6 - 7 | SW8260B | VOC | Trichloromethane (Chloroform) | 1.1 UJ | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1294 | BVBS1294S008 | N | 8/18/2015 | 6 - 7 | SW8260B | VOC | Vinyl chloride | 2.2 UJ | 2.2 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S007 | N | 8/18/2015 | 2.5 - 4 | SW8015B | HC | Diesel Range Organics (C12-C14) | 5500 U | 2700 | 5500 | 5000 | µg/kg | X | N |
| SO | BVBS1295 | BVBS1295S007 | N | 8/18/2015 | 2.5 - 4 | SW8015B | HC | Diesel Range Organics (C15-C20) | 5500 U | 2700 | 5500 | 5000 | µg/kg | X | N |
| SO | BVBS1295 | BVBS1295S007 | N | 8/18/2015 | 2.5 - 4 | SW8015B | HC | Diesel Range Organics (C21-C30) | 5500 U | 2700 | 5500 | 5000 | µg/kg | X | N |
| SO | BVBS1295 | BVBS1295S007 | N | 8/18/2015 | 2.5 - 4 | SW8015B | HC | Diesel Range Organics (C8-C11) | 5500 U | 2700 | 5500 | 1000 | µg/kg | X | RL |
| SO | BVBS1295 | BVBS1295S007 | N | 8/18/2015 | 2.5 - 4 | SW8015B | HC | GRO (C4-C12) | 950 U | 480 | 950 | 1000 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S007 | N | 8/18/2015 | 2.5 - 4 | SW8015B | HC | ORO (C31-C40) | 11000 U | 5500 | 11000 | 10000 | µg/kg | X | N |
| SO | BVBS1295 | BVBS1295S007 | N | 8/18/2015 | 2.5 - 4 | SW8015B | HC | TOTAL EFH(C8-C40) | 7400 = | 2700 | 5500 | 10000 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S007 | N | 8/18/2015 | 2.5 - 4 | SW8270C-SIM | PAH | 1-Methylnaphthalene | 11 U | 5.5 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1295 | BVBS1295S007 | N | 8/18/2015 | 2.5 - 4 | SW8270C-SIM | PAH | 2-Methylnaphthalene | 11 U | 5.5 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1295 | BVBS1295S007 | N | 8/18/2015 | 2.5 - 4 | SW8270C-SIM | PAH | Acenaphthene | 11 U | 5.5 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1295 | BVBS1295S007 | N | 8/18/2015 | 2.5 - 4 | SW8270C-SIM | PAH | Acenaphthylene | 11 U | 5.5 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1295 | BVBS1295S007 | N | 8/18/2015 | 2.5 - 4 | SW8270C-SIM | PAH | Anthracene | 11 U | 5.5 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1295 | BVBS1295S007 | N | 8/18/2015 | 2.5 - 4 | SW8270C-SIM | PAH | Benzo(a)anthracene | 11 U | 5.5 | 11 | NC | µg/kg | | NC |
| SO | BVBS1295 | BVBS1295S007 | N | 8/18/2015 | 2.5 - 4 | SW8270C-SIM | PAH | Benzo(a)pyrene | 11 U | 5.5 | 11 | NC | µg/kg | | NC |
| SO | BVBS1295 | BVBS1295S007 | N | 8/18/2015 | 2.5 - 4 | SW8270C-SIM | PAH | Benzo(b)fluoranthene | 11 U | 5.5 | 11 | NC | µg/kg | | NC |
| SO | BVBS1295 | BVBS1295S007 | N | 8/18/2015 | 2.5 - 4 | SW8270C-SIM | PAH | Benzo(ghi)perylene | 11 U | 5.5 | 11 | 2.5 | µg/kg | X | RL |

APPENDIX G-1

**Analytical Data - August 2015 Post-ISCO Soil Sampling**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | FSP SL | Units | FSP Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1295 | BVBS1295S007 | N | 8/18/2015 | 2.5 - 4 | SW8270C-SIM | PAH | Benzo(k)fluoranthene | 11 U | 5.5 | 11 | NC | µg/kg | | NC |
| SO | BVBS1295 | BVBS1295S007 | N | 8/18/2015 | 2.5 - 4 | SW8270C-SIM | PAH | Chrysene | 11 U | 5.5 | 11 | NC | µg/kg | | NC |
| SO | BVBS1295 | BVBS1295S007 | N | 8/18/2015 | 2.5 - 4 | SW8270C-SIM | PAH | Dibenzo(a,h)anthracene | 11 U | 5.5 | 11 | NC | µg/kg | | NC |
| SO | BVBS1295 | BVBS1295S007 | N | 8/18/2015 | 2.5 - 4 | SW8270C-SIM | PAH | Fluoranthene | 11 U | 5.5 | 11 | 5.2 | µg/kg | X | RL |
| SO | BVBS1295 | BVBS1295S007 | N | 8/18/2015 | 2.5 - 4 | SW8270C-SIM | PAH | Fluorene | 11 U | 5.5 | 11 | 3.8 | µg/kg | X | RL |
| SO | BVBS1295 | BVBS1295S007 | N | 8/18/2015 | 2.5 - 4 | SW8270C-SIM | PAH | Indeno(1,2,3-cd)pyrene | 11 U | 5.5 | 11 | NC | µg/kg | | NC |
| SO | BVBS1295 | BVBS1295S007 | N | 8/18/2015 | 2.5 - 4 | SW8270C-SIM | PAH | Naphthalene | 11 U | 5.5 | 11 | 3.6 | µg/kg | X | RL |
| SO | BVBS1295 | BVBS1295S007 | N | 8/18/2015 | 2.5 - 4 | SW8270C-SIM | PAH | PAHTEQM | 0 U | | | 4.47 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S007 | N | 8/18/2015 | 2.5 - 4 | SW8270C-SIM | PAH | Phenanthrene | 11 U | 5.5 | 11 | 3.9 | µg/kg | X | RL |
| SO | BVBS1295 | BVBS1295S007 | N | 8/18/2015 | 2.5 - 4 | SW8270C-SIM | PAH | Pyrene | 11 U | 5.5 | 11 | 5.6 | µg/kg | X | N |
| SO | BVBS1295 | BVBS1295S007 | N | 8/18/2015 | 2.5 - 4 | SW8270C-SIM | PHTH | Bis(2-ethylhexyl)phthalate | 22 U | 11 | 22 | 61 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S007 | N | 8/18/2015 | 2.5 - 4 | SW8270C-SIM | PHTH | Butyl benzyl phthalate | 22 U | 11 | 22 | 100 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S007 | N | 8/18/2015 | 2.5 - 4 | SW8270C-SIM | PHTH | Diethyl phthalate | 22 U | 11 | 22 | 27 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S007 | N | 8/18/2015 | 2.5 - 4 | SW8270C-SIM | PHTH | Dimethyl phthalate | 22 U | 11 | 22 | 27 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S007 | N | 8/18/2015 | 2.5 - 4 | SW8270C-SIM | PHTH | Di-n-butyl phthalate | 22 U | 11 | 22 | 27 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S007 | N | 8/18/2015 | 2.5 - 4 | SW8270C-SIM | PHTH | Di-n-octyl phthalate | 22 U | 11 | 22 | 27 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S007 | N | 8/18/2015 | 2.5 - 4 | SW8260B | SVOC | Diisopropyl ether | 0.95 U | 0.95 | 9.5 | 10 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S007 | N | 8/18/2015 | 2.5 - 4 | SW8270C-SIM | SVOC | n-Nitrosodimethylamine | 22 U | 11 | 22 | 10 | µg/kg | X | RL |
| SO | BVBS1295 | BVBS1295S007 | N | 8/18/2015 | 2.5 - 4 | SW8260B | SVOC | tert-Amyl methyl ether | 0.95 U | 0.95 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S007 | N | 8/18/2015 | 2.5 - 4 | SW8260B | SVOC | tert-Butyl alcohol | 9.5 U | 9.5 | 48 | 50 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S007 | N | 8/18/2015 | 2.5 - 4 | SW8260B | SVOC | tert-Butyl ethyl ether | 0.95 U | 0.95 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S007 | N | 8/18/2015 | 2.5 - 4 | SW8260B | VOC | 1,1,1,2-Tetrachloroethane | 0.95 U | 0.95 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S007 | N | 8/18/2015 | 2.5 - 4 | SW8260B | VOC | 1,1,1-Trichloroethane | 0.95 U | 0.95 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S007 | N | 8/18/2015 | 2.5 - 4 | SW8260B | VOC | 1,1,2,2-Tetrachloroethane | 0.95 U | 0.95 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S007 | N | 8/18/2015 | 2.5 - 4 | SW8260B | VOC | 1,1,2-Trichloro-1,2,2-trifluoroethane | 1.9 U | 1.9 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S007 | N | 8/18/2015 | 2.5 - 4 | SW8260B | VOC | 1,1,2-Trichloroethane | 0.95 U | 0.95 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S007 | N | 8/18/2015 | 2.5 - 4 | SW8260B | VOC | 1,1-Dichloroethane | 0.95 U | 0.95 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S007 | N | 8/18/2015 | 2.5 - 4 | SW8260B | VOC | 1,1-Dichloroethene | 0.95 U | 0.95 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S007 | N | 8/18/2015 | 2.5 - 4 | SW8260B | VOC | 1,1-Dichloropropene | 0.95 U | 0.95 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S007 | N | 8/18/2015 | 2.5 - 4 | SW8260B | VOC | 1,2,3-Trichlorobenzene | 1.9 U | 1.9 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S007 | N | 8/18/2015 | 2.5 - 4 | SW8260B | VOC | 1,2,3-Trichloropropane | 1.9 U | 1.9 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S007 | N | 8/18/2015 | 2.5 - 4 | SW8260B | VOC | 1,2,4-Trichlorobenzene | 1.9 U | 1.9 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S007 | N | 8/18/2015 | 2.5 - 4 | SW8260B | VOC | 1,2,4-Trimethylbenzene | 0.95 U | 0.95 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S007 | N | 8/18/2015 | 2.5 - 4 | SW8260B | VOC | 1,2-Dibromo-3-chloropropane | 1.9 U | 1.9 | 9.5 | 10 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S007 | N | 8/18/2015 | 2.5 - 4 | SW8260B | VOC | 1,2-Dibromoethane (EDB) | 0.95 U | 0.95 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S007 | N | 8/18/2015 | 2.5 - 4 | SW8260B | VOC | 1,2-Dichlorobenzene | 0.95 U | 0.95 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S007 | N | 8/18/2015 | 2.5 - 4 | SW8260B | VOC | 1,2-Dichloroethane | 0.95 U | 0.95 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S007 | N | 8/18/2015 | 2.5 - 4 | SW8260B | VOC | 1,2-Dichloropropane | 0.95 U | 0.95 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S007 | N | 8/18/2015 | 2.5 - 4 | SW8260B | VOC | 1,3,5-Trimethylbenzene | 0.95 U | 0.95 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S007 | N | 8/18/2015 | 2.5 - 4 | SW8260B | VOC | 1,3-Dichlorobenzene | 0.95 U | 0.95 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S007 | N | 8/18/2015 | 2.5 - 4 | SW8260B | VOC | 1,3-Dichloropropane | 0.95 U | 0.95 | 4.8 | 5 | µg/kg | | N |

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**Analytical Data - August 2015 Post-ISCO Soil Sampling**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | FSP SL | Units | FSP Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1295 | BVBS1295S007 | N | 8/18/2015 | 2.5 - 4 | SW8260B | VOC | 1,4-Dichlorobenzene | 0.95 U | 0.95 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S007 | N | 8/18/2015 | 2.5 - 4 | SW8260B | VOC | 2,2-Dichloropropane | 1.9 U | 1.9 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S007 | N | 8/18/2015 | 2.5 - 4 | SW8260B | VOC | 2-Butanone (MEK) | 4.8 U | 4.8 | 19 | 20 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S007 | N | 8/18/2015 | 2.5 - 4 | SW8260B | VOC | 2-Chloro-1,1,1-trifluoroethane | 1.9 U | 1.9 | 9.5 | 10 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S007 | N | 8/18/2015 | 2.5 - 4 | SW8260B | VOC | 2-Chloroethyl vinyl ether | 1.9 U | 1.9 | 9.5 | 10 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S007 | N | 8/18/2015 | 2.5 - 4 | SW8260B | VOC | 2-Chlorotoluene | 0.95 U | 0.95 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S007 | N | 8/18/2015 | 2.5 - 4 | SW8260B | VOC | 2-Hexanone | 4.8 U | 4.8 | 9.5 | 10 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S007 | N | 8/18/2015 | 2.5 - 4 | SW8260B | VOC | 4-Chlorotoluene | 0.95 U | 0.95 | 9.5 | 10 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S007 | N | 8/18/2015 | 2.5 - 4 | SW8260B | VOC | 4-Methyl-2-pentanone (MIBK) | 4.8 U | 4.8 | 9.5 | 10 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S007 | N | 8/18/2015 | 2.5 - 4 | SW8260B | VOC | Acetone | 13 J | 4.8 | 19 | 20 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S007 | N | 8/18/2015 | 2.5 - 4 | SW8260B | VOC | Benzene | 0.95 U | 0.95 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S007 | N | 8/18/2015 | 2.5 - 4 | SW8260B | VOC | Bromobenzene | 0.95 U | 0.95 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S007 | N | 8/18/2015 | 2.5 - 4 | SW8260B | VOC | Bromochloromethane | 0.95 U | 0.95 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S007 | N | 8/18/2015 | 2.5 - 4 | SW8260B | VOC | Bromodichloromethane | 0.95 U | 0.95 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S007 | N | 8/18/2015 | 2.5 - 4 | SW8260B | VOC | Bromoform | 1.9 U | 1.9 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S007 | N | 8/18/2015 | 2.5 - 4 | SW8260B | VOC | Bromomethane | 1.9 U | 1.9 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S007 | N | 8/18/2015 | 2.5 - 4 | SW8260B | VOC | Carbon tetrachloride | 0.95 U | 0.95 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S007 | N | 8/18/2015 | 2.5 - 4 | SW8260B | VOC | Chlorobenzene | 0.95 U | 0.95 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S007 | N | 8/18/2015 | 2.5 - 4 | SW8260B | VOC | Chloroethane | 1.9 U | 1.9 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S007 | N | 8/18/2015 | 2.5 - 4 | SW8260B | VOC | Chloromethane | 1.9 U | 1.9 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S007 | N | 8/18/2015 | 2.5 - 4 | SW8260B | VOC | Chlorotrifluoroethylene | 1.9 U | 1.9 | 9.5 | 10 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S007 | N | 8/18/2015 | 2.5 - 4 | SW8260B | VOC | cis-1,2-Dichloroethene | 0.95 U | 0.95 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S007 | N | 8/18/2015 | 2.5 - 4 | SW8260B | VOC | cis-1,3-Dichloropropene | 0.95 U | 0.95 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S007 | N | 8/18/2015 | 2.5 - 4 | SW8260B | VOC | Dibromochloromethane | 0.95 U | 0.95 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S007 | N | 8/18/2015 | 2.5 - 4 | SW8260B | VOC | Dibromomethane | 0.95 U | 0.95 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S007 | N | 8/18/2015 | 2.5 - 4 | SW8260B | VOC | Dichlorodifluoromethane | 1.9 U | 1.9 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S007 | N | 8/18/2015 | 2.5 - 4 | SW8260B | VOC | Ethylbenzene | 0.95 U | 0.95 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S007 | N | 8/18/2015 | 2.5 - 4 | SW8260B | VOC | Hexachlorobutadiene | 1.9 U | 1.9 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S007 | N | 8/18/2015 | 2.5 - 4 | SW8260B | VOC | Isopropylbenzene | 0.95 U | 0.95 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S007 | N | 8/18/2015 | 2.5 - 4 | SW8260B | VOC | m,p-Xylenes | 1.9 U | 1.9 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S007 | N | 8/18/2015 | 2.5 - 4 | SW8260B | VOC | Methylene chloride | 1.9 U | 1.9 | 9.5 | 10 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S007 | N | 8/18/2015 | 2.5 - 4 | SW8260B | VOC | Methyl-tert-butyl Ether (MTBE) | 0.95 U | 0.95 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S007 | N | 8/18/2015 | 2.5 - 4 | SW8260B | VOC | n-butylbenzene | 0.95 U | 0.95 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S007 | N | 8/18/2015 | 2.5 - 4 | SW8260B | VOC | n-Propylbenzene | 0.95 U | 0.95 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S007 | N | 8/18/2015 | 2.5 - 4 | SW8260B | VOC | o-Xylene | 0.95 U | 0.95 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S007 | N | 8/18/2015 | 2.5 - 4 | SW8260B | VOC | p-Isopropyltoluene | 0.95 U | 0.95 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S007 | N | 8/18/2015 | 2.5 - 4 | SW8260B | VOC | sec-Butylbenzene | 0.95 U | 0.95 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S007 | N | 8/18/2015 | 2.5 - 4 | SW8260B | VOC | Styrene | 0.95 U | 0.95 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S007 | N | 8/18/2015 | 2.5 - 4 | SW8260B | VOC | tert-Butylbenzene | 0.95 U | 0.95 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S007 | N | 8/18/2015 | 2.5 - 4 | SW8260B | VOC | Tetrachloroethene | 0.95 U | 0.95 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S007 | N | 8/18/2015 | 2.5 - 4 | SW8260B | VOC | Toluene | 0.95 U | 0.95 | 4.8 | 5 | µg/kg | | N |

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**Analytical Data - August 2015 Post-ISCO Soil Sampling**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | FSP SL | Units | FSP Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1295 | BVBS1295S007 | N | 8/18/2015 | 2.5 - 4 | SW8260B | VOC | trans-1,2-Dichloroethene | 0.95 U | 0.95 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S007 | N | 8/18/2015 | 2.5 - 4 | SW8260B | VOC | trans-1,3-Dichloropropene | 0.95 U | 0.95 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S007 | N | 8/18/2015 | 2.5 - 4 | SW8260B | VOC | Trichloroethene | 0.95 U | 0.95 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S007 | N | 8/18/2015 | 2.5 - 4 | SW8260B | VOC | Trichlorofluoromethane | 1.9 U | 1.9 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S007 | N | 8/18/2015 | 2.5 - 4 | SW8260B | VOC | Trichloromethane (Chloroform) | 0.95 U | 0.95 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S007 | N | 8/18/2015 | 2.5 - 4 | SW8260B | VOC | Vinyl chloride | 1.9 U | 1.9 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S007SP | FS | 8/18/2015 | 2.5 - 4 | D2216 | GENCHEM | Moisture | 9.2 = | | | NC | percent | | NC |
| SO | BVBS1295 | BVBS1295S007SP | FS | 8/18/2015 | 2.5 - 4 | SW8015B | HC | Diesel Range Organics (C12-C14) | 5500 U | 1400 | 5500 | 5000 | µg/kg | X | N |
| SO | BVBS1295 | BVBS1295S007SP | FS | 8/18/2015 | 2.5 - 4 | SW8015B | HC | Diesel Range Organics (C15-C20) | 2200 J | 1400 | 5500 | 5000 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S007SP | FS | 8/18/2015 | 2.5 - 4 | SW8015B | HC | Diesel Range Organics (C21-C30) | 5500 U | 1400 | 5500 | 5000 | µg/kg | X | N |
| SO | BVBS1295 | BVBS1295S007SP | FS | 8/18/2015 | 2.5 - 4 | SW8015B | HC | Diesel Range Organics (C8-C11) | 5500 U | 1400 | 5500 | 1000 | µg/kg | X | RL |
| SO | BVBS1295 | BVBS1295S007SP | FS | 8/18/2015 | 2.5 - 4 | SW8015B | HC | GRO (C4-C12) | 560 U | 140 | 560 | 1000 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S007SP | FS | 8/18/2015 | 2.5 - 4 | SW8015B | HC | ORO (C31-C40) | 5500 U | 1400 | 5500 | 10000 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S007SP | FS | 8/18/2015 | 2.5 - 4 | SW8270C-SIM | PAH | 1-Methylnaphthalene | 11 U | 4.4 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1295 | BVBS1295S007SP | FS | 8/18/2015 | 2.5 - 4 | SW8270C-SIM | PAH | 2-Methylnaphthalene | 11 U | 5 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1295 | BVBS1295S007SP | FS | 8/18/2015 | 2.5 - 4 | SW8270C-SIM | PAH | Acenaphthene | 11 U | 5.1 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1295 | BVBS1295S007SP | FS | 8/18/2015 | 2.5 - 4 | SW8270C-SIM | PAH | Acenaphthylene | 11 U | 5 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1295 | BVBS1295S007SP | FS | 8/18/2015 | 2.5 - 4 | SW8270C-SIM | PAH | Anthracene | 11 U | 5.5 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1295 | BVBS1295S007SP | FS | 8/18/2015 | 2.5 - 4 | SW8270C-SIM | PAH | Benzo(a)anthracene | 11 U | 4.9 | 11 | NC | µg/kg | | NC |
| SO | BVBS1295 | BVBS1295S007SP | FS | 8/18/2015 | 2.5 - 4 | SW8270C-SIM | PAH | Benzo(a)pyrene | 11 U | 5.2 | 11 | NC | µg/kg | | NC |
| SO | BVBS1295 | BVBS1295S007SP | FS | 8/18/2015 | 2.5 - 4 | SW8270C-SIM | PAH | Benzo(b)fluoranthene | 11 U | 5.4 | 11 | NC | µg/kg | | NC |
| SO | BVBS1295 | BVBS1295S007SP | FS | 8/18/2015 | 2.5 - 4 | SW8270C-SIM | PAH | Benzo(ghi)perylene | 9.3 J | 5.3 | 11 | 2.5 | µg/kg | X | Y |
| SO | BVBS1295 | BVBS1295S007SP | FS | 8/18/2015 | 2.5 - 4 | SW8270C-SIM | PAH | Benzo(k)fluoranthene | 11 U | 5.3 | 11 | NC | µg/kg | | NC |
| SO | BVBS1295 | BVBS1295S007SP | FS | 8/18/2015 | 2.5 - 4 | SW8270C-SIM | PAH | Chrysene | 11 U | 4.6 | 11 | NC | µg/kg | | NC |
| SO | BVBS1295 | BVBS1295S007SP | FS | 8/18/2015 | 2.5 - 4 | SW8270C-SIM | PAH | Dibenzo(a,h)anthracene | 11 U | 5.1 | 11 | NC | µg/kg | | NC |
| SO | BVBS1295 | BVBS1295S007SP | FS | 8/18/2015 | 2.5 - 4 | SW8270C-SIM | PAH | Fluoranthene | 11 U | 5.4 | 11 | 5.2 | µg/kg | X | RL |
| SO | BVBS1295 | BVBS1295S007SP | FS | 8/18/2015 | 2.5 - 4 | SW8270C-SIM | PAH | Fluorene | 11 U | 5.4 | 11 | 3.8 | µg/kg | X | RL |
| SO | BVBS1295 | BVBS1295S007SP | FS | 8/18/2015 | 2.5 - 4 | SW8270C-SIM | PAH | Indeno(1,2,3-cd)pyrene | 9.5 J | 6.9 | 11 | NC | µg/kg | | NC |
| SO | BVBS1295 | BVBS1295S007SP | FS | 8/18/2015 | 2.5 - 4 | SW8270C-SIM | PAH | Naphthalene | 11 U | 4.5 | 11 | 3.6 | µg/kg | X | RL |
| SO | BVBS1295 | BVBS1295S007SP | FS | 8/18/2015 | 2.5 - 4 | SW8270C-SIM | PAH | PAHTEQM | 0.95 = | | | 4.47 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S007SP | FS | 8/18/2015 | 2.5 - 4 | SW8270C-SIM | PAH | Phenanthrene | 11 U | 5.4 | 11 | 3.9 | µg/kg | X | RL |
| SO | BVBS1295 | BVBS1295S007SP | FS | 8/18/2015 | 2.5 - 4 | SW8270C-SIM | PAH | Pyrene | 11 U | 4.7 | 11 | 5.6 | µg/kg | X | N |
| SO | BVBS1295 | BVBS1295S007SP | FS | 8/18/2015 | 2.5 - 4 | SW8270C-SIM | PHTH | Bis(2-ethylhexyl)phthalate | 21 J | 6 | 11 | 61 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S007SP | FS | 8/18/2015 | 2.5 - 4 | SW8270C-SIM | PHTH | Butyl benzyl phthalate | 11 U | 5.3 | 11 | 100 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S007SP | FS | 8/18/2015 | 2.5 - 4 | SW8270C-SIM | PHTH | Diethyl phthalate | 11 U | 6.1 | 11 | 27 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S007SP | FS | 8/18/2015 | 2.5 - 4 | SW8270C-SIM | PHTH | Dimethyl phthalate | 220 = | 4.1 | 11 | 27 | µg/kg | X | Y |
| SO | BVBS1295 | BVBS1295S007SP | FS | 8/18/2015 | 2.5 - 4 | SW8270C-SIM | PHTH | Di-n-butyl phthalate | 550 U | 150 | 550 | 27 | µg/kg | X | RL |
| SO | BVBS1295 | BVBS1295S007SP | FS | 8/18/2015 | 2.5 - 4 | SW8270C-SIM | PHTH | Di-n-octyl phthalate | 11 U | 5.2 | 11 | 27 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S007SP | FS | 8/18/2015 | 2.5 - 4 | SW8270C-SIM | SVOC | n-Nitrosodimethylamine | 11 UJ | 6 | 11 | 10 | µg/kg | X | N |
| SO | BVBS1295 | BVBS1295S007SP | FS | 8/18/2015 | 2.5 - 4 | SW8260B | VOC | 1,1,1,2-Tetrachloroethane | 0.24 U | 0.24 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S007SP | FS | 8/18/2015 | 2.5 - 4 | SW8260B | VOC | 1,1,1-Trichloroethane | 0.23 U | 0.23 | 5.1 | 5 | µg/kg | | N |

APPENDIX G-1

**Analytical Data - August 2015 Post-ISCO Soil Sampling**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | FSP SL | Units | FSP Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1295 | BVBS1295S007SP | FS | 8/18/2015 | 2.5 - 4 | SW8260B | VOC | 1,1,2,2-Tetrachloroethane | 0.35 U | 0.35 | 20 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S007SP | FS | 8/18/2015 | 2.5 - 4 | SW8260B | VOC | 1,1,2-Trichloro-1,2,2-trifluoroethane | 0.36 U | 0.36 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S007SP | FS | 8/18/2015 | 2.5 - 4 | SW8260B | VOC | 1,1,2-Trichloroethane | 0.36 U | 0.36 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S007SP | FS | 8/18/2015 | 2.5 - 4 | SW8260B | VOC | 1,1-Dichloroethane | 0.21 U | 0.21 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S007SP | FS | 8/18/2015 | 2.5 - 4 | SW8260B | VOC | 1,1-Dichloroethene | 0.35 U | 0.35 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S007SP | FS | 8/18/2015 | 2.5 - 4 | SW8260B | VOC | 1,1-Dichloropropene | 0.33 U | 0.33 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S007SP | FS | 8/18/2015 | 2.5 - 4 | SW8260B | VOC | 1,2,3-Trichlorobenzene | 0.92 U | 0.92 | 20 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S007SP | FS | 8/18/2015 | 2.5 - 4 | SW8260B | VOC | 1,2,3-Trichloropropane | 0.84 U | 0.84 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S007SP | FS | 8/18/2015 | 2.5 - 4 | SW8260B | VOC | 1,2,4-Trichlorobenzene | 0.31 U | 0.31 | 20 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S007SP | FS | 8/18/2015 | 2.5 - 4 | SW8260B | VOC | 1,2,4-Trimethylbenzene | 0.59 U | 0.59 | 10 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S007SP | FS | 8/18/2015 | 2.5 - 4 | SW8260B | VOC | 1,2-Dibromo-3-chloropropane | 1.8 U | 1.8 | 10 | 10 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S007SP | FS | 8/18/2015 | 2.5 - 4 | SW8260B | VOC | 1,2-Dibromoethane (EDB) | 0.26 U | 0.26 | 10 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S007SP | FS | 8/18/2015 | 2.5 - 4 | SW8260B | VOC | 1,2-Dichlorobenzene | 0.23 U | 0.23 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S007SP | FS | 8/18/2015 | 2.5 - 4 | SW8260B | VOC | 1,2-Dichloroethane | 0.32 U | 0.32 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S007SP | FS | 8/18/2015 | 2.5 - 4 | SW8260B | VOC | 1,2-Dichloropropane | 0.44 U | 0.44 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S007SP | FS | 8/18/2015 | 2.5 - 4 | SW8260B | VOC | 1,3,5-Trimethylbenzene | 0.56 U | 0.56 | 10 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S007SP | FS | 8/18/2015 | 2.5 - 4 | SW8260B | VOC | 1,3-Dichlorobenzene | 0.18 U | 0.18 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S007SP | FS | 8/18/2015 | 2.5 - 4 | SW8260B | VOC | 1,3-Dichloropropane | 0.26 U | 0.26 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S007SP | FS | 8/18/2015 | 2.5 - 4 | SW8260B | VOC | 1,4-Dichlorobenzene | 0.22 U | 0.22 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S007SP | FS | 8/18/2015 | 2.5 - 4 | SW8260B | VOC | 2,2-Dichloropropane | 0.34 U | 0.34 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S007SP | FS | 8/18/2015 | 2.5 - 4 | SW8260B | VOC | 2-Butanone (MEK) | 3.8 U | 3.8 | 10 | 20 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S007SP | FS | 8/18/2015 | 2.5 - 4 | SW8260B | VOC | 2-Chloro-1,1,1-trifluoroethane | 0.63 U | 0.63 | 5.1 | 10 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S007SP | FS | 8/18/2015 | 2.5 - 4 | SW8260B | VOC | 2-Chloroethyl vinyl ether | 8.5 U | 8.5 | 51 | 10 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S007SP | FS | 8/18/2015 | 2.5 - 4 | SW8260B | VOC | 2-Chlorotoluene | 0.23 U | 0.23 | 10 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S007SP | FS | 8/18/2015 | 2.5 - 4 | SW8260B | VOC | 2-Hexanone | 1.8 U | 1.8 | 10 | 10 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S007SP | FS | 8/18/2015 | 2.5 - 4 | SW8260B | VOC | 4-Chlorotoluene | 0.22 U | 0.22 | 10 | 10 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S007SP | FS | 8/18/2015 | 2.5 - 4 | SW8260B | VOC | 4-Methyl-2-pentanone (MIBK) | 4.4 U | 4.4 | 10 | 10 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S007SP | FS | 8/18/2015 | 2.5 - 4 | SW8260B | VOC | Acetone | 6.3 U | 6.3 | 20 | 20 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S007SP | FS | 8/18/2015 | 2.5 - 4 | SW8260B | VOC | Benzene | 0.34 J | 0.13 | 0.51 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S007SP | FS | 8/18/2015 | 2.5 - 4 | SW8260B | VOC | Bromobenzene | 0.21 U | 0.21 | 20 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S007SP | FS | 8/18/2015 | 2.5 - 4 | SW8260B | VOC | Bromochloromethane | 0.7 U | 0.7 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S007SP | FS | 8/18/2015 | 2.5 - 4 | SW8260B | VOC | Bromodichloromethane | 0.24 U | 0.24 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S007SP | FS | 8/18/2015 | 2.5 - 4 | SW8260B | VOC | Bromoform | 0.8 U | 0.8 | 10 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S007SP | FS | 8/18/2015 | 2.5 - 4 | SW8260B | VOC | Bromomethane | 9.5 U | 9.5 | 20 | 5 | µg/kg | X | RL |
| SO | BVBS1295 | BVBS1295S007SP | FS | 8/18/2015 | 2.5 - 4 | SW8260B | VOC | Carbon tetrachloride | 0.29 U | 0.29 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S007SP | FS | 8/18/2015 | 2.5 - 4 | SW8260B | VOC | Chlorobenzene | 0.23 U | 0.23 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S007SP | FS | 8/18/2015 | 2.5 - 4 | SW8260B | VOC | Chloroethane | 1.5 U | 1.5 | 10 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S007SP | FS | 8/18/2015 | 2.5 - 4 | SW8260B | VOC | Chloromethane | 0.31 U | 0.31 | 10 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S007SP | FS | 8/18/2015 | 2.5 - 4 | SW8260B | VOC | Chlorotrifluoroethylene | 1.2 U | 1.2 | 5.1 | 10 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S007SP | FS | 8/18/2015 | 2.5 - 4 | SW8260B | VOC | cis-1,2-Dichloroethene | 0.28 U | 0.28 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S007SP | FS | 8/18/2015 | 2.5 - 4 | SW8260B | VOC | cis-1,3-Dichloropropene | 0.26 U | 0.26 | 5.1 | 5 | µg/kg | | N |

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**Analytical Data - August 2015 Post-ISCO Soil Sampling**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | FSP SL | Units | FSP Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1295 | BVBS1295S007SP | FS | 8/18/2015 | 2.5 - 4 | SW8260B | VOC | Dibromochloromethane | 0.58 U | 0.58 | 10 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S007SP | FS | 8/18/2015 | 2.5 - 4 | SW8260B | VOC | Dibromomethane | 0.78 U | 0.78 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S007SP | FS | 8/18/2015 | 2.5 - 4 | SW8260B | VOC | Dichlorodifluoromethane | 0.45 U | 0.45 | 10 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S007SP | FS | 8/18/2015 | 2.5 - 4 | SW8260B | VOC | Ethylbenzene | 0.15 U | 0.15 | 10 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S007SP | FS | 8/18/2015 | 2.5 - 4 | SW8260B | VOC | Hexachlorobutadiene | 0.32 U | 0.32 | 20 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S007SP | FS | 8/18/2015 | 2.5 - 4 | SW8260B | VOC | Isopropylbenzene | 0.55 U | 0.55 | 10 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S007SP | FS | 8/18/2015 | 2.5 - 4 | SW8260B | VOC | m,p-Xylenes | 0.27 U | 0.27 | 20 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S007SP | FS | 8/18/2015 | 2.5 - 4 | SW8260B | VOC | Methylene chloride | 1.4 U | 1.4 | 5.1 | 10 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S007SP | FS | 8/18/2015 | 2.5 - 4 | SW8260B | VOC | Methyl-tert-butyl Ether (MTBE) | 0.3 U | 0.3 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S007SP | FS | 8/18/2015 | 2.5 - 4 | SW8260B | VOC | n-butylbenzene | 0.16 U | 0.16 | 20 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S007SP | FS | 8/18/2015 | 2.5 - 4 | SW8260B | VOC | n-Propylbenzene | 0.51 U | 0.51 | 10 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S007SP | FS | 8/18/2015 | 2.5 - 4 | SW8260B | VOC | o-Xylene | 0.56 U | 0.56 | 10 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S007SP | FS | 8/18/2015 | 2.5 - 4 | SW8260B | VOC | p-Isopropyltoluene | 0.64 U | 0.64 | 20 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S007SP | FS | 8/18/2015 | 2.5 - 4 | SW8260B | VOC | sec-Butylbenzene | 0.59 U | 0.59 | 20 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S007SP | FS | 8/18/2015 | 2.5 - 4 | SW8260B | VOC | Styrene | 0.61 U | 0.61 | 20 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S007SP | FS | 8/18/2015 | 2.5 - 4 | SW8260B | VOC | tert-Butylbenzene | 0.15 U | 0.15 | 20 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S007SP | FS | 8/18/2015 | 2.5 - 4 | SW8260B | VOC | Tetrachloroethene | 0.21 U | 0.21 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S007SP | FS | 8/18/2015 | 2.5 - 4 | SW8260B | VOC | Toluene | 0.52 U | 0.52 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S007SP | FS | 8/18/2015 | 2.5 - 4 | SW8260B | VOC | trans-1,2-Dichloroethene | 0.51 U | 0.51 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S007SP | FS | 8/18/2015 | 2.5 - 4 | SW8260B | VOC | trans-1,3-Dichloropropene | 0.61 U | 0.61 | 10 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S007SP | FS | 8/18/2015 | 2.5 - 4 | SW8260B | VOC | Trichloroethene | 0.3 U | 0.3 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S007SP | FS | 8/18/2015 | 2.5 - 4 | SW8260B | VOC | Trichlorofluoromethane | 0.38 U | 0.38 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S007SP | FS | 8/18/2015 | 2.5 - 4 | SW8260B | VOC | Trichloromethane (Chloroform) | 0.24 U | 0.24 | 5.1 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S007SP | FS | 8/18/2015 | 2.5 - 4 | SW8260B | VOC | Vinyl chloride | 0.51 U | 0.51 | 10 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S008 | N | 8/18/2015 | 5.5 - 8 | SW8015B | HC | Diesel Range Organics (C12-C14) | 120000 = | 2700 | 5500 | 5000 | µg/kg | X | Y |
| SO | BVBS1295 | BVBS1295S008 | N | 8/18/2015 | 5.5 - 8 | SW8015B | HC | Diesel Range Organics (C15-C20) | 29000 = | 2700 | 5500 | 5000 | µg/kg | X | Y |
| SO | BVBS1295 | BVBS1295S008 | N | 8/18/2015 | 5.5 - 8 | SW8015B | HC | Diesel Range Organics (C21-C30) | 5500 U | 2700 | 5500 | 5000 | µg/kg | X | N |
| SO | BVBS1295 | BVBS1295S008 | N | 8/18/2015 | 5.5 - 8 | SW8015B | HC | Diesel Range Organics (C8-C11) | 8100 U | 2700 | 5500 | 1000 | µg/kg | X | RL |
| SO | BVBS1295 | BVBS1295S008 | N | 8/18/2015 | 5.5 - 8 | SW8015B | HC | GRO (C4-C12) | 14000 = | 480 | 950 | 1000 | µg/kg | X | Y |
| SO | BVBS1295 | BVBS1295S008 | N | 8/18/2015 | 5.5 - 8 | SW8015B | HC | ORO (C31-C40) | 11000 U | 5500 | 11000 | 10000 | µg/kg | X | N |
| SO | BVBS1295 | BVBS1295S008 | N | 8/18/2015 | 5.5 - 8 | SW8015B | HC | TOTAL EFH(C8-C40) | 160000 = | 2700 | 5500 | 10000 | µg/kg | X | Y |
| SO | BVBS1295 | BVBS1295S008 | N | 8/18/2015 | 5.5 - 8 | SW8270C-SIM | PAH | 1-Methylnaphthalene | 11 U | 5.5 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1295 | BVBS1295S008 | N | 8/18/2015 | 5.5 - 8 | SW8270C-SIM | PAH | 2-Methylnaphthalene | 11 U | 5.5 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1295 | BVBS1295S008 | N | 8/18/2015 | 5.5 - 8 | SW8270C-SIM | PAH | Acenaphthene | 11 U | 5.5 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1295 | BVBS1295S008 | N | 8/18/2015 | 5.5 - 8 | SW8270C-SIM | PAH | Acenaphthylene | 11 U | 5.5 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1295 | BVBS1295S008 | N | 8/18/2015 | 5.5 - 8 | SW8270C-SIM | PAH | Anthracene | 11 U | 5.5 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1295 | BVBS1295S008 | N | 8/18/2015 | 5.5 - 8 | SW8270C-SIM | PAH | Benzo(a)anthracene | 11 U | 5.5 | 11 | NC | µg/kg | | NC |
| SO | BVBS1295 | BVBS1295S008 | N | 8/18/2015 | 5.5 - 8 | SW8270C-SIM | PAH | Benzo(a)pyrene | 11 U | 5.5 | 11 | NC | µg/kg | | NC |
| SO | BVBS1295 | BVBS1295S008 | N | 8/18/2015 | 5.5 - 8 | SW8270C-SIM | PAH | Benzo(b)fluoranthene | 11 U | 5.5 | 11 | NC | µg/kg | | NC |
| SO | BVBS1295 | BVBS1295S008 | N | 8/18/2015 | 5.5 - 8 | SW8270C-SIM | PAH | Benzo(ghi)perylene | 11 U | 5.5 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1295 | BVBS1295S008 | N | 8/18/2015 | 5.5 - 8 | SW8270C-SIM | PAH | Benzo(k)fluoranthene | 11 U | 5.5 | 11 | NC | µg/kg | | NC |

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**Analytical Data - August 2015 Post-ISCO Soil Sampling**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | FSP SL | Units | FSP Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1295 | BVBS1295S008 | N | 8/18/2015 | 5.5 - 8 | SW8270C-SIM | PAH | Chrysene | 11 U | 5.5 | 11 | NC | µg/kg | | NC |
| SO | BVBS1295 | BVBS1295S008 | N | 8/18/2015 | 5.5 - 8 | SW8270C-SIM | PAH | Dibenzo(a,h)anthracene | 11 U | 5.5 | 11 | NC | µg/kg | | NC |
| SO | BVBS1295 | BVBS1295S008 | N | 8/18/2015 | 5.5 - 8 | SW8270C-SIM | PAH | Fluoranthene | 11 U | 5.5 | 11 | 5.2 | µg/kg | X | RL |
| SO | BVBS1295 | BVBS1295S008 | N | 8/18/2015 | 5.5 - 8 | SW8270C-SIM | PAH | Fluorene | 11 U | 5.5 | 11 | 3.8 | µg/kg | X | RL |
| SO | BVBS1295 | BVBS1295S008 | N | 8/18/2015 | 5.5 - 8 | SW8270C-SIM | PAH | Indeno(1,2,3-cd)pyrene | 11 U | 5.5 | 11 | NC | µg/kg | | NC |
| SO | BVBS1295 | BVBS1295S008 | N | 8/18/2015 | 5.5 - 8 | SW8270C-SIM | PAH | Naphthalene | 11 U | 5.5 | 11 | 3.6 | µg/kg | X | RL |
| SO | BVBS1295 | BVBS1295S008 | N | 8/18/2015 | 5.5 - 8 | SW8270C-SIM | PAH | PAHTEQM | 0 U | | | 4.47 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S008 | N | 8/18/2015 | 5.5 - 8 | SW8270C-SIM | PAH | Phenanthrene | 11 U | 5.5 | 11 | 3.9 | µg/kg | X | RL |
| SO | BVBS1295 | BVBS1295S008 | N | 8/18/2015 | 5.5 - 8 | SW8270C-SIM | PAH | Pyrene | 6.1 J | 5.5 | 11 | 5.6 | µg/kg | X | Y |
| SO | BVBS1295 | BVBS1295S008 | N | 8/18/2015 | 5.5 - 8 | SW8270C-SIM | PHTH | Bis(2-ethylhexyl)phthalate | 78 = | 11 | 22 | 61 | µg/kg | X | Y |
| SO | BVBS1295 | BVBS1295S008 | N | 8/18/2015 | 5.5 - 8 | SW8270C-SIM | PHTH | Butyl benzyl phthalate | 22 U | 11 | 22 | 100 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S008 | N | 8/18/2015 | 5.5 - 8 | SW8270C-SIM | PHTH | Diethyl phthalate | 22 U | 11 | 22 | 27 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S008 | N | 8/18/2015 | 5.5 - 8 | SW8270C-SIM | PHTH | Dimethyl phthalate | 22 U | 11 | 22 | 27 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S008 | N | 8/18/2015 | 5.5 - 8 | SW8270C-SIM | PHTH | Di-n-butyl phthalate | 22 U | 11 | 22 | 27 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S008 | N | 8/18/2015 | 5.5 - 8 | SW8270C-SIM | PHTH | Di-n-octyl phthalate | 22 U | 11 | 22 | 27 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S008 | N | 8/18/2015 | 5.5 - 8 | SW8260B | SVOC | Diisopropyl ether | 0.97 U | 0.97 | 9.7 | 10 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S008 | N | 8/18/2015 | 5.5 - 8 | SW8270C-SIM | SVOC | n-Nitrosodimethylamine | 22 U | 11 | 22 | 10 | µg/kg | X | RL |
| SO | BVBS1295 | BVBS1295S008 | N | 8/18/2015 | 5.5 - 8 | SW8260B | SVOC | tert-Amyl methyl ether | 0.97 U | 0.97 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S008 | N | 8/18/2015 | 5.5 - 8 | SW8260B | SVOC | tert-Butyl alcohol | 9.7 U | 9.7 | 48 | 50 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S008 | N | 8/18/2015 | 5.5 - 8 | SW8260B | SVOC | tert-Butyl ethyl ether | 0.97 U | 0.97 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S008 | N | 8/18/2015 | 5.5 - 8 | SW8260B | VOC | 1,1,1,2-Tetrachloroethane | 0.97 U | 0.97 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S008 | N | 8/18/2015 | 5.5 - 8 | SW8260B | VOC | 1,1,1-Trichloroethane | 0.97 U | 0.97 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S008 | N | 8/18/2015 | 5.5 - 8 | SW8260B | VOC | 1,1,2,2-Tetrachloroethane | 0.97 U | 0.97 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S008 | N | 8/18/2015 | 5.5 - 8 | SW8260B | VOC | 1,1,2-Trichloro-1,2,2-trifluoroethane | 1.9 U | 1.9 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S008 | N | 8/18/2015 | 5.5 - 8 | SW8260B | VOC | 1,1,2-Trichloroethane | 0.97 U | 0.97 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S008 | N | 8/18/2015 | 5.5 - 8 | SW8260B | VOC | 1,1-Dichloroethane | 0.97 U | 0.97 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S008 | N | 8/18/2015 | 5.5 - 8 | SW8260B | VOC | 1,1-Dichloroethene | 0.97 U | 0.97 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S008 | N | 8/18/2015 | 5.5 - 8 | SW8260B | VOC | 1,1-Dichloropropene | 0.97 U | 0.97 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S008 | N | 8/18/2015 | 5.5 - 8 | SW8260B | VOC | 1,2,3-Trichlorobenzene | 1.9 U | 1.9 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S008 | N | 8/18/2015 | 5.5 - 8 | SW8260B | VOC | 1,2,3-Trichloropropane | 1.9 U | 1.9 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S008 | N | 8/18/2015 | 5.5 - 8 | SW8260B | VOC | 1,2,4-Trichlorobenzene | 1.9 U | 1.9 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S008 | N | 8/18/2015 | 5.5 - 8 | SW8260B | VOC | 1,2,4-Trimethylbenzene | 0.97 U | 0.97 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S008 | N | 8/18/2015 | 5.5 - 8 | SW8260B | VOC | 1,2-Dibromo-3-chloropropane | 1.9 U | 1.9 | 9.7 | 10 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S008 | N | 8/18/2015 | 5.5 - 8 | SW8260B | VOC | 1,2-Dibromoethane (EDB) | 0.97 U | 0.97 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S008 | N | 8/18/2015 | 5.5 - 8 | SW8260B | VOC | 1,2-Dichlorobenzene | 0.97 U | 0.97 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S008 | N | 8/18/2015 | 5.5 - 8 | SW8260B | VOC | 1,2-Dichloroethane | 0.97 U | 0.97 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S008 | N | 8/18/2015 | 5.5 - 8 | SW8260B | VOC | 1,2-Dichloropropane | 0.97 U | 0.97 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S008 | N | 8/18/2015 | 5.5 - 8 | SW8260B | VOC | 1,3,5-Trimethylbenzene | 0.97 U | 0.97 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S008 | N | 8/18/2015 | 5.5 - 8 | SW8260B | VOC | 1,3-Dichlorobenzene | 0.97 U | 0.97 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S008 | N | 8/18/2015 | 5.5 - 8 | SW8260B | VOC | 1,3-Dichloropropane | 0.97 U | 0.97 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S008 | N | 8/18/2015 | 5.5 - 8 | SW8260B | VOC | 1,4-Dichlorobenzene | 0.97 U | 0.97 | 4.8 | 5 | µg/kg | | N |

APPENDIX G-1

**Analytical Data - August 2015 Post-ISCO Soil Sampling**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | FSP SL | Units | FSP Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1295 | BVBS1295S008 | N | 8/18/2015 | 5.5 - 8 | SW8260B | VOC | 2,2-Dichloropropane | 1.9 U | 1.9 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S008 | N | 8/18/2015 | 5.5 - 8 | SW8260B | VOC | 2-Butanone (MEK) | 4.8 U | 4.8 | 19 | 20 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S008 | N | 8/18/2015 | 5.5 - 8 | SW8260B | VOC | 2-Chloro-1,1,1-trifluoroethane | 1.9 U | 1.9 | 9.7 | 10 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S008 | N | 8/18/2015 | 5.5 - 8 | SW8260B | VOC | 2-Chloroethyl vinyl ether | 1.9 U | 1.9 | 9.7 | 10 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S008 | N | 8/18/2015 | 5.5 - 8 | SW8260B | VOC | 2-Chlorotoluene | 0.97 U | 0.97 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S008 | N | 8/18/2015 | 5.5 - 8 | SW8260B | VOC | 2-Hexanone | 4.8 U | 4.8 | 9.7 | 10 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S008 | N | 8/18/2015 | 5.5 - 8 | SW8260B | VOC | 4-Chlorotoluene | 0.97 U | 0.97 | 9.7 | 10 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S008 | N | 8/18/2015 | 5.5 - 8 | SW8260B | VOC | 4-Methyl-2-pentanone (MIBK) | 4.8 U | 4.8 | 9.7 | 10 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S008 | N | 8/18/2015 | 5.5 - 8 | SW8260B | VOC | Acetone | 17 J | 4.8 | 19 | 20 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S008 | N | 8/18/2015 | 5.5 - 8 | SW8260B | VOC | Benzene | 0.97 U | 0.97 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S008 | N | 8/18/2015 | 5.5 - 8 | SW8260B | VOC | Bromobenzene | 0.97 U | 0.97 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S008 | N | 8/18/2015 | 5.5 - 8 | SW8260B | VOC | Bromochloromethane | 0.97 U | 0.97 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S008 | N | 8/18/2015 | 5.5 - 8 | SW8260B | VOC | Bromodichloromethane | 0.97 U | 0.97 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S008 | N | 8/18/2015 | 5.5 - 8 | SW8260B | VOC | Bromoform | 1.9 U | 1.9 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S008 | N | 8/18/2015 | 5.5 - 8 | SW8260B | VOC | Bromomethane | 1.9 U | 1.9 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S008 | N | 8/18/2015 | 5.5 - 8 | SW8260B | VOC | Carbon tetrachloride | 0.97 U | 0.97 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S008 | N | 8/18/2015 | 5.5 - 8 | SW8260B | VOC | Chlorobenzene | 0.97 U | 0.97 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S008 | N | 8/18/2015 | 5.5 - 8 | SW8260B | VOC | Chloroethane | 1.9 U | 1.9 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S008 | N | 8/18/2015 | 5.5 - 8 | SW8260B | VOC | Chloromethane | 1.9 U | 1.9 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S008 | N | 8/18/2015 | 5.5 - 8 | SW8260B | VOC | Chlorotrifluoroethylene | 1.9 U | 1.9 | 9.7 | 10 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S008 | N | 8/18/2015 | 5.5 - 8 | SW8260B | VOC | cis-1,2-Dichloroethene | 0.97 U | 0.97 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S008 | N | 8/18/2015 | 5.5 - 8 | SW8260B | VOC | cis-1,3-Dichloropropene | 0.97 U | 0.97 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S008 | N | 8/18/2015 | 5.5 - 8 | SW8260B | VOC | Dibromochloromethane | 0.97 U | 0.97 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S008 | N | 8/18/2015 | 5.5 - 8 | SW8260B | VOC | Dibromomethane | 0.97 U | 0.97 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S008 | N | 8/18/2015 | 5.5 - 8 | SW8260B | VOC | Dichlorodifluoromethane | 1.9 U | 1.9 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S008 | N | 8/18/2015 | 5.5 - 8 | SW8260B | VOC | Ethylbenzene | 0.97 U | 0.97 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S008 | N | 8/18/2015 | 5.5 - 8 | SW8260B | VOC | Hexachlorobutadiene | 1.9 U | 1.9 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S008 | N | 8/18/2015 | 5.5 - 8 | SW8260B | VOC | Isopropylbenzene | 0.97 U | 0.97 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S008 | N | 8/18/2015 | 5.5 - 8 | SW8260B | VOC | m,p-Xylenes | 1.9 U | 1.9 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S008 | N | 8/18/2015 | 5.5 - 8 | SW8260B | VOC | Methylene chloride | 1.9 U | 1.9 | 9.7 | 10 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S008 | N | 8/18/2015 | 5.5 - 8 | SW8260B | VOC | Methyl-tert-butyl Ether (MTBE) | 0.97 U | 0.97 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S008 | N | 8/18/2015 | 5.5 - 8 | SW8260B | VOC | n-butylbenzene | 0.97 U | 0.97 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S008 | N | 8/18/2015 | 5.5 - 8 | SW8260B | VOC | n-Propylbenzene | 0.97 U | 0.97 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S008 | N | 8/18/2015 | 5.5 - 8 | SW8260B | VOC | o-Xylene | 0.97 U | 0.97 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S008 | N | 8/18/2015 | 5.5 - 8 | SW8260B | VOC | p-Isopropyltoluene | 0.97 U | 0.97 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S008 | N | 8/18/2015 | 5.5 - 8 | SW8260B | VOC | sec-Butylbenzene | 0.97 U | 0.97 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S008 | N | 8/18/2015 | 5.5 - 8 | SW8260B | VOC | Styrene | 0.97 U | 0.97 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S008 | N | 8/18/2015 | 5.5 - 8 | SW8260B | VOC | tert-Butylbenzene | 0.97 U | 0.97 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S008 | N | 8/18/2015 | 5.5 - 8 | SW8260B | VOC | Tetrachloroethene | 0.97 U | 0.97 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S008 | N | 8/18/2015 | 5.5 - 8 | SW8260B | VOC | Toluene | 0.97 U | 0.97 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S008 | N | 8/18/2015 | 5.5 - 8 | SW8260B | VOC | trans-1,2-Dichloroethene | 0.97 U | 0.97 | 4.8 | 5 | µg/kg | | N |

APPENDIX G-1

**Analytical Data - August 2015 Post-ISCO Soil Sampling**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | FSP SL | Units | FSP Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1295 | BVBS1295S008 | N | 8/18/2015 | 5.5 - 8 | SW8260B | VOC | trans-1,3-Dichloropropene | 0.97 U | 0.97 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S008 | N | 8/18/2015 | 5.5 - 8 | SW8260B | VOC | Trichloroethene | 0.97 U | 0.97 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S008 | N | 8/18/2015 | 5.5 - 8 | SW8260B | VOC | Trichlorofluoromethane | 1.9 U | 1.9 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S008 | N | 8/18/2015 | 5.5 - 8 | SW8260B | VOC | Trichloromethane (Chloroform) | 0.97 U | 0.97 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1295 | BVBS1295S008 | N | 8/18/2015 | 5.5 - 8 | SW8260B | VOC | Vinyl chloride | 1.9 U | 1.9 | 4.8 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S005 | N | 8/18/2015 | 4 - 5 | SW8015B | HC | Diesel Range Organics (C12-C14) | 260000 = | 2700 | 5300 | 5000 | µg/kg | X | Y |
| SO | BVBS1297 | BVBS1297S005 | N | 8/18/2015 | 4 - 5 | SW8015B | HC | Diesel Range Organics (C15-C20) | 61000 = | 2700 | 5300 | 5000 | µg/kg | X | Y |
| SO | BVBS1297 | BVBS1297S005 | N | 8/18/2015 | 4 - 5 | SW8015B | HC | Diesel Range Organics (C21-C30) | 11000 = | 2700 | 5300 | 5000 | µg/kg | X | Y |
| SO | BVBS1297 | BVBS1297S005 | N | 8/18/2015 | 4 - 5 | SW8015B | HC | Diesel Range Organics (C8-C11) | 14000 U | 2700 | 5300 | 1000 | µg/kg | X | RL |
| SO | BVBS1297 | BVBS1297S005 | N | 8/18/2015 | 4 - 5 | SW8015B | HC | GRO (C4-C12) | 1500 = | 520 | 1000 | 1000 | µg/kg | X | Y |
| SO | BVBS1297 | BVBS1297S005 | N | 8/18/2015 | 4 - 5 | SW8015B | HC | ORO (C31-C40) | 7800 J | 5300 | 11000 | 10000 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S005 | N | 8/18/2015 | 4 - 5 | SW8015B | HC | TOTAL EFH(C8-C40) | 370000 = | 2700 | 5300 | 10000 | µg/kg | X | Y |
| SO | BVBS1297 | BVBS1297S005 | N | 8/18/2015 | 4 - 5 | SW8270C-SIM | PAH | 1-Methylnaphthalene | 11 U | 5.3 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1297 | BVBS1297S005 | N | 8/18/2015 | 4 - 5 | SW8270C-SIM | PAH | 2-Methylnaphthalene | 11 U | 5.3 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1297 | BVBS1297S005 | N | 8/18/2015 | 4 - 5 | SW8270C-SIM | PAH | Acenaphthene | 11 U | 5.3 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1297 | BVBS1297S005 | N | 8/18/2015 | 4 - 5 | SW8270C-SIM | PAH | Acenaphthylene | 11 U | 5.3 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1297 | BVBS1297S005 | N | 8/18/2015 | 4 - 5 | SW8270C-SIM | PAH | Anthracene | 11 U | 5.3 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1297 | BVBS1297S005 | N | 8/18/2015 | 4 - 5 | SW8270C-SIM | PAH | Benzo(a)anthracene | 11 U | 5.3 | 11 | NC | µg/kg | | NC |
| SO | BVBS1297 | BVBS1297S005 | N | 8/18/2015 | 4 - 5 | SW8270C-SIM | PAH | Benzo(a)pyrene | 11 U | 5.3 | 11 | NC | µg/kg | | NC |
| SO | BVBS1297 | BVBS1297S005 | N | 8/18/2015 | 4 - 5 | SW8270C-SIM | PAH | Benzo(b)fluoranthene | 11 U | 5.3 | 11 | NC | µg/kg | | NC |
| SO | BVBS1297 | BVBS1297S005 | N | 8/18/2015 | 4 - 5 | SW8270C-SIM | PAH | Benzo(ghi)perylene | 11 U | 5.3 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1297 | BVBS1297S005 | N | 8/18/2015 | 4 - 5 | SW8270C-SIM | PAH | Benzo(k)fluoranthene | 11 U | 5.3 | 11 | NC | µg/kg | | NC |
| SO | BVBS1297 | BVBS1297S005 | N | 8/18/2015 | 4 - 5 | SW8270C-SIM | PAH | Chrysene | 11 U | 5.3 | 11 | NC | µg/kg | | NC |
| SO | BVBS1297 | BVBS1297S005 | N | 8/18/2015 | 4 - 5 | SW8270C-SIM | PAH | Dibenzo(a,h)anthracene | 11 U | 5.3 | 11 | NC | µg/kg | | NC |
| SO | BVBS1297 | BVBS1297S005 | N | 8/18/2015 | 4 - 5 | SW8270C-SIM | PAH | Fluoranthene | 11 U | 5.3 | 11 | 5.2 | µg/kg | X | RL |
| SO | BVBS1297 | BVBS1297S005 | N | 8/18/2015 | 4 - 5 | SW8270C-SIM | PAH | Fluorene | 11 U | 5.3 | 11 | 3.8 | µg/kg | X | RL |
| SO | BVBS1297 | BVBS1297S005 | N | 8/18/2015 | 4 - 5 | SW8270C-SIM | PAH | Indeno(1,2,3-cd)pyrene | 11 U | 5.3 | 11 | NC | µg/kg | | NC |
| SO | BVBS1297 | BVBS1297S005 | N | 8/18/2015 | 4 - 5 | SW8270C-SIM | PAH | Naphthalene | 11 U | 5.3 | 11 | 3.6 | µg/kg | X | RL |
| SO | BVBS1297 | BVBS1297S005 | N | 8/18/2015 | 4 - 5 | SW8270C-SIM | PAH | PAHTEQM | 0 U | | | 4.47 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S005 | N | 8/18/2015 | 4 - 5 | SW8270C-SIM | PAH | Phenanthrene | 11 U | 5.3 | 11 | 3.9 | µg/kg | X | RL |
| SO | BVBS1297 | BVBS1297S005 | N | 8/18/2015 | 4 - 5 | SW8270C-SIM | PAH | Pyrene | 11 U | 5.3 | 11 | 5.6 | µg/kg | X | N |
| SO | BVBS1297 | BVBS1297S005 | N | 8/18/2015 | 4 - 5 | SW8270C-SIM | PHTH | Bis(2-ethylhexyl)phthalate | 21 U | 11 | 21 | 61 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S005 | N | 8/18/2015 | 4 - 5 | SW8270C-SIM | PHTH | Butyl benzyl phthalate | 21 U | 11 | 21 | 100 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S005 | N | 8/18/2015 | 4 - 5 | SW8270C-SIM | PHTH | Diethyl phthalate | 21 U | 11 | 21 | 27 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S005 | N | 8/18/2015 | 4 - 5 | SW8270C-SIM | PHTH | Dimethyl phthalate | 21 U | 11 | 21 | 27 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S005 | N | 8/18/2015 | 4 - 5 | SW8270C-SIM | PHTH | Di-n-butyl phthalate | 21 U | 11 | 21 | 27 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S005 | N | 8/18/2015 | 4 - 5 | SW8270C-SIM | PHTH | Di-n-octyl phthalate | 21 U | 11 | 21 | 27 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S005 | N | 8/18/2015 | 4 - 5 | SW8260B | SVOC | Diisopropyl ether | 0.98 U | 0.98 | 9.8 | 10 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S005 | N | 8/18/2015 | 4 - 5 | SW8270C-SIM | SVOC | n-Nitrosodimethylamine | 21 U | 11 | 21 | 10 | µg/kg | X | RL |
| SO | BVBS1297 | BVBS1297S005 | N | 8/18/2015 | 4 - 5 | SW8260B | SVOC | tert-Amyl methyl ether | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S005 | N | 8/18/2015 | 4 - 5 | SW8260B | SVOC | tert-Butyl alcohol | 9.8 U | 9.8 | 49 | 50 | µg/kg | | N |

APPENDIX G-1

**Analytical Data - August 2015 Post-ISCO Soil Sampling**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | FSP SL | Units | FSP Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1297 | BVBS1297S005 | N | 8/18/2015 | 4 - 5 | SW8260B | SVOC | tert-Butyl ethyl ether | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S005 | N | 8/18/2015 | 4 - 5 | SW8260B | VOC | 1,1,1,2-Tetrachloroethane | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S005 | N | 8/18/2015 | 4 - 5 | SW8260B | VOC | 1,1,1-Trichloroethane | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S005 | N | 8/18/2015 | 4 - 5 | SW8260B | VOC | 1,1,2,2-Tetrachloroethane | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S005 | N | 8/18/2015 | 4 - 5 | SW8260B | VOC | 1,1,2-Trichloro-1,2,2-trifluoroethane | 2 U | 2 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S005 | N | 8/18/2015 | 4 - 5 | SW8260B | VOC | 1,1,2-Trichloroethane | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S005 | N | 8/18/2015 | 4 - 5 | SW8260B | VOC | 1,1-Dichloroethane | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S005 | N | 8/18/2015 | 4 - 5 | SW8260B | VOC | 1,1-Dichloroethene | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S005 | N | 8/18/2015 | 4 - 5 | SW8260B | VOC | 1,1-Dichloropropene | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S005 | N | 8/18/2015 | 4 - 5 | SW8260B | VOC | 1,2,3-Trichlorobenzene | 2 U | 2 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S005 | N | 8/18/2015 | 4 - 5 | SW8260B | VOC | 1,2,3-Trichloropropane | 2 U | 2 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S005 | N | 8/18/2015 | 4 - 5 | SW8260B | VOC | 1,2,4-Trichlorobenzene | 2 U | 2 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S005 | N | 8/18/2015 | 4 - 5 | SW8260B | VOC | 1,2,4-Trimethylbenzene | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S005 | N | 8/18/2015 | 4 - 5 | SW8260B | VOC | 1,2-Dibromo-3-chloropropane | 2 U | 2 | 9.8 | 10 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S005 | N | 8/18/2015 | 4 - 5 | SW8260B | VOC | 1,2-Dibromoethane (EDB) | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S005 | N | 8/18/2015 | 4 - 5 | SW8260B | VOC | 1,2-Dichlorobenzene | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S005 | N | 8/18/2015 | 4 - 5 | SW8260B | VOC | 1,2-Dichloroethane | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S005 | N | 8/18/2015 | 4 - 5 | SW8260B | VOC | 1,2-Dichloropropane | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S005 | N | 8/18/2015 | 4 - 5 | SW8260B | VOC | 1,3,5-Trimethylbenzene | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S005 | N | 8/18/2015 | 4 - 5 | SW8260B | VOC | 1,3-Dichlorobenzene | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S005 | N | 8/18/2015 | 4 - 5 | SW8260B | VOC | 1,3-Dichloropropane | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S005 | N | 8/18/2015 | 4 - 5 | SW8260B | VOC | 1,4-Dichlorobenzene | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S005 | N | 8/18/2015 | 4 - 5 | SW8260B | VOC | 2,2-Dichloropropane | 2 U | 2 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S005 | N | 8/18/2015 | 4 - 5 | SW8260B | VOC | 2-Butanone (MEK) | 12 J | 4.9 | 20 | 20 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S005 | N | 8/18/2015 | 4 - 5 | SW8260B | VOC | 2-Chloro-1,1,1-trifluoroethane | 2 U | 2 | 9.8 | 10 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S005 | N | 8/18/2015 | 4 - 5 | SW8260B | VOC | 2-Chloroethyl vinyl ether | 2 U | 2 | 9.8 | 10 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S005 | N | 8/18/2015 | 4 - 5 | SW8260B | VOC | 2-Chlorotoluene | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S005 | N | 8/18/2015 | 4 - 5 | SW8260B | VOC | 2-Hexanone | 4.9 U | 4.9 | 9.8 | 10 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S005 | N | 8/18/2015 | 4 - 5 | SW8260B | VOC | 4-Chlorotoluene | 0.98 U | 0.98 | 9.8 | 10 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S005 | N | 8/18/2015 | 4 - 5 | SW8260B | VOC | 4-Methyl-2-pentanone (MIBK) | 4.9 U | 4.9 | 9.8 | 10 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S005 | N | 8/18/2015 | 4 - 5 | SW8260B | VOC | Acetone | 120 = | 4.9 | 20 | 20 | µg/kg | X | Y |
| SO | BVBS1297 | BVBS1297S005 | N | 8/18/2015 | 4 - 5 | SW8260B | VOC | Benzene | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S005 | N | 8/18/2015 | 4 - 5 | SW8260B | VOC | Bromobenzene | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S005 | N | 8/18/2015 | 4 - 5 | SW8260B | VOC | Bromochloromethane | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S005 | N | 8/18/2015 | 4 - 5 | SW8260B | VOC | Bromodichloromethane | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S005 | N | 8/18/2015 | 4 - 5 | SW8260B | VOC | Bromoform | 2 U | 2 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S005 | N | 8/18/2015 | 4 - 5 | SW8260B | VOC | Bromomethane | 2 U | 2 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S005 | N | 8/18/2015 | 4 - 5 | SW8260B | VOC | Carbon tetrachloride | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S005 | N | 8/18/2015 | 4 - 5 | SW8260B | VOC | Chlorobenzene | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S005 | N | 8/18/2015 | 4 - 5 | SW8260B | VOC | Chloroethane | 2 U | 2 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S005 | N | 8/18/2015 | 4 - 5 | SW8260B | VOC | Chloromethane | 2 U | 2 | 4.9 | 5 | µg/kg | | N |

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**Analytical Data - August 2015 Post-ISCO Soil Sampling**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | FSP SL | Units | FSP Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1297 | BVBS1297S005 | N | 8/18/2015 | 4 - 5 | SW8260B | VOC | Chlorotrifluoroethylene | 2 U | 2 | 9.8 | 10 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S005 | N | 8/18/2015 | 4 - 5 | SW8260B | VOC | cis-1,2-Dichloroethene | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S005 | N | 8/18/2015 | 4 - 5 | SW8260B | VOC | cis-1,3-Dichloropropene | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S005 | N | 8/18/2015 | 4 - 5 | SW8260B | VOC | Dibromochloromethane | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S005 | N | 8/18/2015 | 4 - 5 | SW8260B | VOC | Dibromomethane | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S005 | N | 8/18/2015 | 4 - 5 | SW8260B | VOC | Dichlorodifluoromethane | 2 U | 2 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S005 | N | 8/18/2015 | 4 - 5 | SW8260B | VOC | Ethylbenzene | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S005 | N | 8/18/2015 | 4 - 5 | SW8260B | VOC | Hexachlorobutadiene | 2 U | 2 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S005 | N | 8/18/2015 | 4 - 5 | SW8260B | VOC | Isopropylbenzene | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S005 | N | 8/18/2015 | 4 - 5 | SW8260B | VOC | m,p-Xylenes | 2 U | 2 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S005 | N | 8/18/2015 | 4 - 5 | SW8260B | VOC | Methylene chloride | 2 U | 2 | 9.8 | 10 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S005 | N | 8/18/2015 | 4 - 5 | SW8260B | VOC | Methyl-tert-butyl Ether (MTBE) | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S005 | N | 8/18/2015 | 4 - 5 | SW8260B | VOC | n-butylbenzene | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S005 | N | 8/18/2015 | 4 - 5 | SW8260B | VOC | n-Propylbenzene | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S005 | N | 8/18/2015 | 4 - 5 | SW8260B | VOC | o-Xylene | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S005 | N | 8/18/2015 | 4 - 5 | SW8260B | VOC | p-Isopropyltoluene | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S005 | N | 8/18/2015 | 4 - 5 | SW8260B | VOC | sec-Butylbenzene | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S005 | N | 8/18/2015 | 4 - 5 | SW8260B | VOC | Styrene | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S005 | N | 8/18/2015 | 4 - 5 | SW8260B | VOC | tert-Butylbenzene | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S005 | N | 8/18/2015 | 4 - 5 | SW8260B | VOC | Tetrachloroethene | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S005 | N | 8/18/2015 | 4 - 5 | SW8260B | VOC | Toluene | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S005 | N | 8/18/2015 | 4 - 5 | SW8260B | VOC | trans-1,2-Dichloroethene | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S005 | N | 8/18/2015 | 4 - 5 | SW8260B | VOC | trans-1,3-Dichloropropene | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S005 | N | 8/18/2015 | 4 - 5 | SW8260B | VOC | Trichloroethene | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S005 | N | 8/18/2015 | 4 - 5 | SW8260B | VOC | Trichlorofluoromethane | 2 U | 2 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S005 | N | 8/18/2015 | 4 - 5 | SW8260B | VOC | Trichloromethane (Chloroform) | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S005 | N | 8/18/2015 | 4 - 5 | SW8260B | VOC | Vinyl chloride | 2 U | 2 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S006 | N | 8/18/2015 | 7 - 8 | SW8015B | HC | Diesel Range Organics (C12-C14) | 5800 U | 2900 | 5800 | 5000 | µg/kg | X | N |
| SO | BVBS1297 | BVBS1297S006 | N | 8/18/2015 | 7 - 8 | SW8015B | HC | Diesel Range Organics (C15-C20) | 5800 U | 2900 | 5800 | 5000 | µg/kg | X | N |
| SO | BVBS1297 | BVBS1297S006 | N | 8/18/2015 | 7 - 8 | SW8015B | HC | Diesel Range Organics (C21-C30) | 5800 U | 2900 | 5800 | 5000 | µg/kg | X | N |
| SO | BVBS1297 | BVBS1297S006 | N | 8/18/2015 | 7 - 8 | SW8015B | HC | Diesel Range Organics (C8-C11) | 5800 U | 2900 | 5800 | 1000 | µg/kg | X | RL |
| SO | BVBS1297 | BVBS1297S006 | N | 8/18/2015 | 7 - 8 | SW8015B | HC | GRO (C4-C12) | 1100 U | 560 | 1100 | 1000 | µg/kg | X | N |
| SO | BVBS1297 | BVBS1297S006 | N | 8/18/2015 | 7 - 8 | SW8015B | HC | ORO (C31-C40) | 12000 U | 5800 | 12000 | 10000 | µg/kg | X | N |
| SO | BVBS1297 | BVBS1297S006 | N | 8/18/2015 | 7 - 8 | SW8015B | HC | TOTAL EFH(C8-C40) | 4400 U | 2900 | 5800 | 10000 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S006 | N | 8/18/2015 | 7 - 8 | SW8270C-SIM | PAH | 1-Methylnaphthalene | 12 U | 5.8 | 12 | 2.5 | µg/kg | X | RL |
| SO | BVBS1297 | BVBS1297S006 | N | 8/18/2015 | 7 - 8 | SW8270C-SIM | PAH | 2-Methylnaphthalene | 12 U | 5.8 | 12 | 2.5 | µg/kg | X | RL |
| SO | BVBS1297 | BVBS1297S006 | N | 8/18/2015 | 7 - 8 | SW8270C-SIM | PAH | Acenaphthene | 12 U | 5.8 | 12 | 2.5 | µg/kg | X | RL |
| SO | BVBS1297 | BVBS1297S006 | N | 8/18/2015 | 7 - 8 | SW8270C-SIM | PAH | Acenaphthylene | 12 U | 5.8 | 12 | 2.5 | µg/kg | X | RL |
| SO | BVBS1297 | BVBS1297S006 | N | 8/18/2015 | 7 - 8 | SW8270C-SIM | PAH | Anthracene | 12 U | 5.8 | 12 | 2.5 | µg/kg | X | RL |
| SO | BVBS1297 | BVBS1297S006 | N | 8/18/2015 | 7 - 8 | SW8270C-SIM | PAH | Benzo(a)anthracene | 12 U | 5.8 | 12 | NC | µg/kg | | NC |
| SO | BVBS1297 | BVBS1297S006 | N | 8/18/2015 | 7 - 8 | SW8270C-SIM | PAH | Benzo(a)pyrene | 12 U | 5.8 | 12 | NC | µg/kg | | NC |

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**Analytical Data - August 2015 Post-ISCO Soil Sampling**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | FSP SL | Units | FSP Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1297 | BVBS1297S006 | N | 8/18/2015 | 7 - 8 | SW8270C-SIM | PAH | Benzo(b)fluoranthene | 12 U | 5.8 | 12 | NC | µg/kg | | NC |
| SO | BVBS1297 | BVBS1297S006 | N | 8/18/2015 | 7 - 8 | SW8270C-SIM | PAH | Benzo(ghi)perylene | 12 U | 5.8 | 12 | 2.5 | µg/kg | X | RL |
| SO | BVBS1297 | BVBS1297S006 | N | 8/18/2015 | 7 - 8 | SW8270C-SIM | PAH | Benzo(k)fluoranthene | 12 U | 5.8 | 12 | NC | µg/kg | | NC |
| SO | BVBS1297 | BVBS1297S006 | N | 8/18/2015 | 7 - 8 | SW8270C-SIM | PAH | Chrysene | 12 U | 5.8 | 12 | NC | µg/kg | | NC |
| SO | BVBS1297 | BVBS1297S006 | N | 8/18/2015 | 7 - 8 | SW8270C-SIM | PAH | Dibenzo(a,h)anthracene | 12 U | 5.8 | 12 | NC | µg/kg | | NC |
| SO | BVBS1297 | BVBS1297S006 | N | 8/18/2015 | 7 - 8 | SW8270C-SIM | PAH | Fluoranthene | 12 U | 5.8 | 12 | 5.2 | µg/kg | X | RL |
| SO | BVBS1297 | BVBS1297S006 | N | 8/18/2015 | 7 - 8 | SW8270C-SIM | PAH | Fluorene | 12 U | 5.8 | 12 | 3.8 | µg/kg | X | RL |
| SO | BVBS1297 | BVBS1297S006 | N | 8/18/2015 | 7 - 8 | SW8270C-SIM | PAH | Indeno(1,2,3-cd)pyrene | 12 U | 5.8 | 12 | NC | µg/kg | | NC |
| SO | BVBS1297 | BVBS1297S006 | N | 8/18/2015 | 7 - 8 | SW8270C-SIM | PAH | Naphthalene | 12 U | 5.8 | 12 | 3.6 | µg/kg | X | RL |
| SO | BVBS1297 | BVBS1297S006 | N | 8/18/2015 | 7 - 8 | SW8270C-SIM | PAH | PAHTEQM | 0 U | | | 4.47 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S006 | N | 8/18/2015 | 7 - 8 | SW8270C-SIM | PAH | Phenanthrene | 12 U | 5.8 | 12 | 3.9 | µg/kg | X | RL |
| SO | BVBS1297 | BVBS1297S006 | N | 8/18/2015 | 7 - 8 | SW8270C-SIM | PAH | Pyrene | 12 U | 5.8 | 12 | 5.6 | µg/kg | X | RL |
| SO | BVBS1297 | BVBS1297S006 | N | 8/18/2015 | 7 - 8 | SW8270C-SIM | PHTH | Bis(2-ethylhexyl)phthalate | 23 U | 12 | 23 | 61 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S006 | N | 8/18/2015 | 7 - 8 | SW8270C-SIM | PHTH | Butyl benzyl phthalate | 23 U | 12 | 23 | 100 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S006 | N | 8/18/2015 | 7 - 8 | SW8270C-SIM | PHTH | Diethyl phthalate | 23 U | 12 | 23 | 27 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S006 | N | 8/18/2015 | 7 - 8 | SW8270C-SIM | PHTH | Dimethyl phthalate | 23 U | 12 | 23 | 27 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S006 | N | 8/18/2015 | 7 - 8 | SW8270C-SIM | PHTH | Di-n-butyl phthalate | 23 U | 12 | 23 | 27 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S006 | N | 8/18/2015 | 7 - 8 | SW8270C-SIM | PHTH | Di-n-octyl phthalate | 23 U | 12 | 23 | 27 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S006 | N | 8/18/2015 | 7 - 8 | SW8260B | SVOC | Diisopropyl ether | 1.1 U | 1.1 | 11 | 10 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S006 | N | 8/18/2015 | 7 - 8 | SW8270C-SIM | SVOC | n-Nitrosodimethylamine | 23 U | 12 | 23 | 10 | µg/kg | X | RL |
| SO | BVBS1297 | BVBS1297S006 | N | 8/18/2015 | 7 - 8 | SW8260B | SVOC | tert-Amyl methyl ether | 1.1 U | 1.1 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S006 | N | 8/18/2015 | 7 - 8 | SW8260B | SVOC | tert-Butyl alcohol | 11 U | 11 | 56 | 50 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S006 | N | 8/18/2015 | 7 - 8 | SW8260B | SVOC | tert-Butyl ethyl ether | 1.1 U | 1.1 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S006 | N | 8/18/2015 | 7 - 8 | SW8260B | VOC | 1,1,1,2-Tetrachloroethane | 1.1 U | 1.1 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S006 | N | 8/18/2015 | 7 - 8 | SW8260B | VOC | 1,1,1-Trichloroethane | 1.1 U | 1.1 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S006 | N | 8/18/2015 | 7 - 8 | SW8260B | VOC | 1,1,2,2-Tetrachloroethane | 1.1 U | 1.1 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S006 | N | 8/18/2015 | 7 - 8 | SW8260B | VOC | 1,1,2-Trichloro-1,2,2-trifluoroethane | 2.2 U | 2.2 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S006 | N | 8/18/2015 | 7 - 8 | SW8260B | VOC | 1,1,2-Trichloroethane | 1.1 U | 1.1 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S006 | N | 8/18/2015 | 7 - 8 | SW8260B | VOC | 1,1-Dichloroethane | 1.1 U | 1.1 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S006 | N | 8/18/2015 | 7 - 8 | SW8260B | VOC | 1,1-Dichloroethene | 1.1 U | 1.1 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S006 | N | 8/18/2015 | 7 - 8 | SW8260B | VOC | 1,1-Dichloropropene | 1.1 U | 1.1 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S006 | N | 8/18/2015 | 7 - 8 | SW8260B | VOC | 1,2,3-Trichlorobenzene | 2.2 U | 2.2 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S006 | N | 8/18/2015 | 7 - 8 | SW8260B | VOC | 1,2,3-Trichloropropane | 2.2 U | 2.2 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S006 | N | 8/18/2015 | 7 - 8 | SW8260B | VOC | 1,2,4-Trichlorobenzene | 2.2 U | 2.2 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S006 | N | 8/18/2015 | 7 - 8 | SW8260B | VOC | 1,2,4-Trimethylbenzene | 1.1 U | 1.1 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S006 | N | 8/18/2015 | 7 - 8 | SW8260B | VOC | 1,2-Dibromo-3-chloropropane | 2.2 U | 2.2 | 11 | 10 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S006 | N | 8/18/2015 | 7 - 8 | SW8260B | VOC | 1,2-Dibromoethane (EDB) | 1.1 U | 1.1 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S006 | N | 8/18/2015 | 7 - 8 | SW8260B | VOC | 1,2-Dichlorobenzene | 1.1 U | 1.1 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S006 | N | 8/18/2015 | 7 - 8 | SW8260B | VOC | 1,2-Dichloroethane | 1.1 U | 1.1 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S006 | N | 8/18/2015 | 7 - 8 | SW8260B | VOC | 1,2-Dichloropropane | 1.1 U | 1.1 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S006 | N | 8/18/2015 | 7 - 8 | SW8260B | VOC | 1,3,5-Trimethylbenzene | 1.1 U | 1.1 | 5.6 | 5 | µg/kg | | N |

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**Analytical Data - August 2015 Post-ISCO Soil Sampling**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | FSP SL | Units | FSP Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1297 | BVBS1297S006 | N | 8/18/2015 | 7 - 8 | SW8260B | VOC | 1,3-Dichlorobenzene | 1.1 U | 1.1 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S006 | N | 8/18/2015 | 7 - 8 | SW8260B | VOC | 1,3-Dichloropropane | 1.1 U | 1.1 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S006 | N | 8/18/2015 | 7 - 8 | SW8260B | VOC | 1,4-Dichlorobenzene | 1.1 U | 1.1 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S006 | N | 8/18/2015 | 7 - 8 | SW8260B | VOC | 2,2-Dichloropropane | 2.2 U | 2.2 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S006 | N | 8/18/2015 | 7 - 8 | SW8260B | VOC | 2-Butanone (MEK) | 5.6 U | 5.6 | 22 | 20 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S006 | N | 8/18/2015 | 7 - 8 | SW8260B | VOC | 2-Chloro-1,1,1-trifluoroethane | 2.2 U | 2.2 | 11 | 10 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S006 | N | 8/18/2015 | 7 - 8 | SW8260B | VOC | 2-Chloroethyl vinyl ether | 2.2 U | 2.2 | 11 | 10 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S006 | N | 8/18/2015 | 7 - 8 | SW8260B | VOC | 2-Chlorotoluene | 1.1 U | 1.1 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S006 | N | 8/18/2015 | 7 - 8 | SW8260B | VOC | 2-Hexanone | 5.6 U | 5.6 | 11 | 10 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S006 | N | 8/18/2015 | 7 - 8 | SW8260B | VOC | 4-Chlorotoluene | 1.1 U | 1.1 | 11 | 10 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S006 | N | 8/18/2015 | 7 - 8 | SW8260B | VOC | 4-Methyl-2-pentanone (MIBK) | 5.6 U | 5.6 | 11 | 10 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S006 | N | 8/18/2015 | 7 - 8 | SW8260B | VOC | Acetone | 21.5 J | 5.6 | 22 | 20 | µg/kg | X | Y |
| SO | BVBS1297 | BVBS1297S006 | N | 8/18/2015 | 7 - 8 | SW8260B | VOC | Benzene | 1.1 U | 1.1 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S006 | N | 8/18/2015 | 7 - 8 | SW8260B | VOC | Bromobenzene | 1.1 U | 1.1 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S006 | N | 8/18/2015 | 7 - 8 | SW8260B | VOC | Bromochloromethane | 1.1 U | 1.1 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S006 | N | 8/18/2015 | 7 - 8 | SW8260B | VOC | Bromodichloromethane | 1.1 U | 1.1 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S006 | N | 8/18/2015 | 7 - 8 | SW8260B | VOC | Bromoform | 2.2 U | 2.2 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S006 | N | 8/18/2015 | 7 - 8 | SW8260B | VOC | Bromomethane | 2.2 U | 2.2 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S006 | N | 8/18/2015 | 7 - 8 | SW8260B | VOC | Carbon tetrachloride | 1.1 U | 1.1 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S006 | N | 8/18/2015 | 7 - 8 | SW8260B | VOC | Chlorobenzene | 1.1 U | 1.1 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S006 | N | 8/18/2015 | 7 - 8 | SW8260B | VOC | Chloroethane | 2.2 U | 2.2 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S006 | N | 8/18/2015 | 7 - 8 | SW8260B | VOC | Chloromethane | 2.2 U | 2.2 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S006 | N | 8/18/2015 | 7 - 8 | SW8260B | VOC | Chlorotrifluoroethylene | 2.2 U | 2.2 | 11 | 10 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S006 | N | 8/18/2015 | 7 - 8 | SW8260B | VOC | cis-1,2-Dichloroethene | 1.1 U | 1.1 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S006 | N | 8/18/2015 | 7 - 8 | SW8260B | VOC | cis-1,3-Dichloropropene | 1.1 U | 1.1 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S006 | N | 8/18/2015 | 7 - 8 | SW8260B | VOC | Dibromochloromethane | 1.1 U | 1.1 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S006 | N | 8/18/2015 | 7 - 8 | SW8260B | VOC | Dibromomethane | 1.1 U | 1.1 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S006 | N | 8/18/2015 | 7 - 8 | SW8260B | VOC | Dichlorodifluoromethane | 2.2 U | 2.2 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S006 | N | 8/18/2015 | 7 - 8 | SW8260B | VOC | Ethylbenzene | 1.1 U | 1.1 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S006 | N | 8/18/2015 | 7 - 8 | SW8260B | VOC | Hexachlorobutadiene | 2.2 U | 2.2 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S006 | N | 8/18/2015 | 7 - 8 | SW8260B | VOC | Isopropylbenzene | 1.1 U | 1.1 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S006 | N | 8/18/2015 | 7 - 8 | SW8260B | VOC | m,p-Xylenes | 2.2 U | 2.2 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S006 | N | 8/18/2015 | 7 - 8 | SW8260B | VOC | Methylene chloride | 2.2 U | 2.2 | 11 | 10 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S006 | N | 8/18/2015 | 7 - 8 | SW8260B | VOC | Methyl-tert-butyl Ether (MTBE) | 1.1 U | 1.1 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S006 | N | 8/18/2015 | 7 - 8 | SW8260B | VOC | n-butylbenzene | 1.1 U | 1.1 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S006 | N | 8/18/2015 | 7 - 8 | SW8260B | VOC | n-Propylbenzene | 1.1 U | 1.1 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S006 | N | 8/18/2015 | 7 - 8 | SW8260B | VOC | o-Xylene | 1.1 U | 1.1 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S006 | N | 8/18/2015 | 7 - 8 | SW8260B | VOC | p-Isopropyltoluene | 1.1 U | 1.1 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S006 | N | 8/18/2015 | 7 - 8 | SW8260B | VOC | sec-Butylbenzene | 1.1 U | 1.1 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S006 | N | 8/18/2015 | 7 - 8 | SW8260B | VOC | Styrene | 1.1 U | 1.1 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S006 | N | 8/18/2015 | 7 - 8 | SW8260B | VOC | tert-Butylbenzene | 1.1 U | 1.1 | 5.6 | 5 | µg/kg | | N |

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**Analytical Data - August 2015 Post-ISCO Soil Sampling**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | FSP SL | Units | FSP Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1297 | BVBS1297S006 | N | 8/18/2015 | 7 - 8 | SW8260B | VOC | Tetrachloroethene | 1.1 U | 1.1 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S006 | N | 8/18/2015 | 7 - 8 | SW8260B | VOC | Toluene | 1.1 U | 1.1 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S006 | N | 8/18/2015 | 7 - 8 | SW8260B | VOC | trans-1,2-Dichloroethene | 1.1 U | 1.1 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S006 | N | 8/18/2015 | 7 - 8 | SW8260B | VOC | trans-1,3-Dichloropropene | 1.1 U | 1.1 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S006 | N | 8/18/2015 | 7 - 8 | SW8260B | VOC | Trichloroethene | 1.1 U | 1.1 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S006 | N | 8/18/2015 | 7 - 8 | SW8260B | VOC | Trichlorofluoromethane | 2.2 U | 2.2 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S006 | N | 8/18/2015 | 7 - 8 | SW8260B | VOC | Trichloromethane (Chloroform) | 1.1 U | 1.1 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1297 | BVBS1297S006 | N | 8/18/2015 | 7 - 8 | SW8260B | VOC | Vinyl chloride | 2.2 U | 2.2 | 5.6 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S005 | N | 8/18/2015 | 4 - 5 | SW8015B | HC | Diesel Range Organics (C12-C14) | 8900000 = | 62000 | 120000 | 5000 | µg/kg | X | Y |
| SO | BVBS1298 | BVBS1298S005 | N | 8/18/2015 | 4 - 5 | SW8015B | HC | Diesel Range Organics (C15-C20) | 1900000 = | 62000 | 120000 | 5000 | µg/kg | X | Y |
| SO | BVBS1298 | BVBS1298S005 | N | 8/18/2015 | 4 - 5 | SW8015B | HC | Diesel Range Organics (C21-C30) | 120000 U | 62000 | 120000 | 5000 | µg/kg | X | RL |
| SO | BVBS1298 | BVBS1298S005 | N | 8/18/2015 | 4 - 5 | SW8015B | HC | Diesel Range Organics (C8-C11) | 1900000 = | 62000 | 120000 | 1000 | µg/kg | X | Y |
| SO | BVBS1298 | BVBS1298S005 | N | 8/18/2015 | 4 - 5 | SW8015B | HC | GRO (C4-C12) | 10000 J | 490 | 980 | 1000 | µg/kg | X | Y |
| SO | BVBS1298 | BVBS1298S005 | N | 8/18/2015 | 4 - 5 | SW8015B | HC | ORO (C31-C40) | 250000 U | 120000 | 250000 | 10000 | µg/kg | X | RL |
| SO | BVBS1298 | BVBS1298S005 | N | 8/18/2015 | 4 - 5 | SW8015B | HC | TOTAL EFH(C8-C40) | 13000000 = | 62000 | 120000 | 10000 | µg/kg | X | Y |
| SO | BVBS1298 | BVBS1298S005 | N | 8/18/2015 | 4 - 5 | SW8270C-SIM | PAH | 1-Methylnaphthalene | 12 U | 6.2 | 12 | 2.5 | µg/kg | X | RL |
| SO | BVBS1298 | BVBS1298S005 | N | 8/18/2015 | 4 - 5 | SW8270C-SIM | PAH | 2-Methylnaphthalene | 12 U | 6.2 | 12 | 2.5 | µg/kg | X | RL |
| SO | BVBS1298 | BVBS1298S005 | N | 8/18/2015 | 4 - 5 | SW8270C-SIM | PAH | Acenaphthene | 12 U | 6.2 | 12 | 2.5 | µg/kg | X | RL |
| SO | BVBS1298 | BVBS1298S005 | N | 8/18/2015 | 4 - 5 | SW8270C-SIM | PAH | Acenaphthylene | 12 U | 6.2 | 12 | 2.5 | µg/kg | X | RL |
| SO | BVBS1298 | BVBS1298S005 | N | 8/18/2015 | 4 - 5 | SW8270C-SIM | PAH | Anthracene | 99 = | 6.2 | 12 | 2.5 | µg/kg | X | Y |
| SO | BVBS1298 | BVBS1298S005 | N | 8/18/2015 | 4 - 5 | SW8270C-SIM | PAH | Benzo(a)anthracene | 57 = | 6.2 | 12 | NC | µg/kg | | NC |
| SO | BVBS1298 | BVBS1298S005 | N | 8/18/2015 | 4 - 5 | SW8270C-SIM | PAH | Benzo(a)pyrene | 75 = | 6.2 | 12 | NC | µg/kg | | NC |
| SO | BVBS1298 | BVBS1298S005 | N | 8/18/2015 | 4 - 5 | SW8270C-SIM | PAH | Benzo(b)fluoranthene | 83 = | 6.2 | 12 | NC | µg/kg | | NC |
| SO | BVBS1298 | BVBS1298S005 | N | 8/18/2015 | 4 - 5 | SW8270C-SIM | PAH | Benzo(ghi)perylene | 100 = | 6.2 | 12 | 2.5 | µg/kg | X | Y |
| SO | BVBS1298 | BVBS1298S005 | N | 8/18/2015 | 4 - 5 | SW8270C-SIM | PAH | Benzo(k)fluoranthene | 22 = | 6.2 | 12 | NC | µg/kg | | NC |
| SO | BVBS1298 | BVBS1298S005 | N | 8/18/2015 | 4 - 5 | SW8270C-SIM | PAH | Chrysene | 59 = | 6.2 | 12 | NC | µg/kg | | NC |
| SO | BVBS1298 | BVBS1298S005 | N | 8/18/2015 | 4 - 5 | SW8270C-SIM | PAH | Dibenzo(a,h)anthracene | 12 U | 6.2 | 12 | NC | µg/kg | | NC |
| SO | BVBS1298 | BVBS1298S005 | N | 8/18/2015 | 4 - 5 | SW8270C-SIM | PAH | Fluoranthene | 400 = | 6.2 | 12 | 5.2 | µg/kg | X | Y |
| SO | BVBS1298 | BVBS1298S005 | N | 8/18/2015 | 4 - 5 | SW8270C-SIM | PAH | Fluorene | 170 = | 6.2 | 12 | 3.8 | µg/kg | X | Y |
| SO | BVBS1298 | BVBS1298S005 | N | 8/18/2015 | 4 - 5 | SW8270C-SIM | PAH | Indeno(1,2,3-cd)pyrene | 49 = | 6.2 | 12 | NC | µg/kg | | NC |
| SO | BVBS1298 | BVBS1298S005 | N | 8/18/2015 | 4 - 5 | SW8270C-SIM | PAH | Naphthalene | 12 U | 6.2 | 12 | 3.6 | µg/kg | X | RL |
| SO | BVBS1298 | BVBS1298S005 | N | 8/18/2015 | 4 - 5 | SW8270C-SIM | PAH | PAHTEQM | 96.69 = | | | 4.47 | µg/kg | X | Y |
| SO | BVBS1298 | BVBS1298S005 | N | 8/18/2015 | 4 - 5 | SW8270C-SIM | PAH | Phenanthrene | 150 = | 6.2 | 12 | 3.9 | µg/kg | X | Y |
| SO | BVBS1298 | BVBS1298S005 | N | 8/18/2015 | 4 - 5 | SW8270C-SIM | PAH | Pyrene | 570 = | 6.2 | 12 | 5.6 | µg/kg | X | Y |
| SO | BVBS1298 | BVBS1298S005 | N | 8/18/2015 | 4 - 5 | SW8270C-SIM | PHTH | Bis(2-ethylhexyl)phthalate | 1900 = | 12 | 25 | 61 | µg/kg | X | Y |
| SO | BVBS1298 | BVBS1298S005 | N | 8/18/2015 | 4 - 5 | SW8270C-SIM | PHTH | Butyl benzyl phthalate | 25 U | 12 | 25 | 100 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S005 | N | 8/18/2015 | 4 - 5 | SW8270C-SIM | PHTH | Diethyl phthalate | 25 U | 12 | 25 | 27 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S005 | N | 8/18/2015 | 4 - 5 | SW8270C-SIM | PHTH | Dimethyl phthalate | 25 U | 12 | 25 | 27 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S005 | N | 8/18/2015 | 4 - 5 | SW8270C-SIM | PHTH | Di-n-butyl phthalate | 25 U | 12 | 25 | 27 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S005 | N | 8/18/2015 | 4 - 5 | SW8270C-SIM | PHTH | Di-n-octyl phthalate | 68 = | 12 | 25 | 27 | µg/kg | X | Y |
| SO | BVBS1298 | BVBS1298S005 | N | 8/18/2015 | 4 - 5 | SW8260B | SVOC | Diisopropyl ether | 1.1 UJ | 1.1 | 11 | 10 | µg/kg | | N |

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**Analytical Data - August 2015 Post-ISCO Soil Sampling**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | FSP SL | Units | FSP Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1298 | BVBS1298S005 | N | 8/18/2015 | 4 - 5 | SW8270C-SIM | SVOC | n-Nitrosodimethylamine | 25 U | 12 | 25 | 10 | µg/kg | X | RL |
| SO | BVBS1298 | BVBS1298S005 | N | 8/18/2015 | 4 - 5 | SW8260B | SVOC | tert-Amyl methyl ether | 1.1 UJ | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S005 | N | 8/18/2015 | 4 - 5 | SW8260B | SVOC | tert-Butyl alcohol | 11 UJ | 11 | 55 | 50 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S005 | N | 8/18/2015 | 4 - 5 | SW8260B | SVOC | tert-Butyl ethyl ether | 1.1 UJ | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S005 | N | 8/18/2015 | 4 - 5 | SW8260B | VOC | 1,1,1,2-Tetrachloroethane | 1.1 UJ | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S005 | N | 8/18/2015 | 4 - 5 | SW8260B | VOC | 1,1,1-Trichloroethane | 1.1 UJ | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S005 | N | 8/18/2015 | 4 - 5 | SW8260B | VOC | 1,1,2,2-Tetrachloroethane | 1.1 UJ | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S005 | N | 8/18/2015 | 4 - 5 | SW8260B | VOC | 1,1,2-Trichloro-1,2,2-trifluoroethane | 2.2 UJ | 2.2 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S005 | N | 8/18/2015 | 4 - 5 | SW8260B | VOC | 1,1,2-Trichloroethane | 1.1 UJ | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S005 | N | 8/18/2015 | 4 - 5 | SW8260B | VOC | 1,1-Dichloroethane | 1.1 UJ | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S005 | N | 8/18/2015 | 4 - 5 | SW8260B | VOC | 1,1-Dichloroethene | 1.1 UJ | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S005 | N | 8/18/2015 | 4 - 5 | SW8260B | VOC | 1,1-Dichloropropene | 1.1 UJ | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S005 | N | 8/18/2015 | 4 - 5 | SW8260B | VOC | 1,2,3-Trichlorobenzene | 2.2 UJ | 2.2 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S005 | N | 8/18/2015 | 4 - 5 | SW8260B | VOC | 1,2,3-Trichloropropane | 2.2 UJ | 2.2 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S005 | N | 8/18/2015 | 4 - 5 | SW8260B | VOC | 1,2,4-Trichlorobenzene | 2.2 UJ | 2.2 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S005 | N | 8/18/2015 | 4 - 5 | SW8260B | VOC | 1,2,4-Trimethylbenzene | 1.1 UJ | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S005 | N | 8/18/2015 | 4 - 5 | SW8260B | VOC | 1,2-Dibromo-3-chloropropane | 2.2 UJ | 2.2 | 11 | 10 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S005 | N | 8/18/2015 | 4 - 5 | SW8260B | VOC | 1,2-Dibromoethane (EDB) | 1.1 UJ | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S005 | N | 8/18/2015 | 4 - 5 | SW8260B | VOC | 1,2-Dichlorobenzene | 1.1 UJ | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S005 | N | 8/18/2015 | 4 - 5 | SW8260B | VOC | 1,2-Dichloroethane | 1.1 UJ | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S005 | N | 8/18/2015 | 4 - 5 | SW8260B | VOC | 1,2-Dichloropropane | 1.1 UJ | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S005 | N | 8/18/2015 | 4 - 5 | SW8260B | VOC | 1,3,5-Trimethylbenzene | 1.1 UJ | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S005 | N | 8/18/2015 | 4 - 5 | SW8260B | VOC | 1,3-Dichlorobenzene | 1.1 UJ | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S005 | N | 8/18/2015 | 4 - 5 | SW8260B | VOC | 1,3-Dichloropropane | 1.1 UJ | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S005 | N | 8/18/2015 | 4 - 5 | SW8260B | VOC | 1,4-Dichlorobenzene | 1.1 UJ | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S005 | N | 8/18/2015 | 4 - 5 | SW8260B | VOC | 2,2-Dichloropropane | 2.2 UJ | 2.2 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S005 | N | 8/18/2015 | 4 - 5 | SW8260B | VOC | 2-Butanone (MEK) | 6.6 J | 5.5 | 22 | 20 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S005 | N | 8/18/2015 | 4 - 5 | SW8260B | VOC | 2-Chloro-1,1,1-trifluoroethane | 2.2 UJ | 2.2 | 11 | 10 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S005 | N | 8/18/2015 | 4 - 5 | SW8260B | VOC | 2-Chloroethyl vinyl ether | 2.2 UJ | 2.2 | 11 | 10 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S005 | N | 8/18/2015 | 4 - 5 | SW8260B | VOC | 2-Chlorotoluene | 1.1 UJ | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S005 | N | 8/18/2015 | 4 - 5 | SW8260B | VOC | 2-Hexanone | 5.5 UJ | 5.5 | 11 | 10 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S005 | N | 8/18/2015 | 4 - 5 | SW8260B | VOC | 4-Chlorotoluene | 1.1 UJ | 1.1 | 11 | 10 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S005 | N | 8/18/2015 | 4 - 5 | SW8260B | VOC | 4-Methyl-2-pentanone (MIBK) | 5.5 UJ | 5.5 | 11 | 10 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S005 | N | 8/18/2015 | 4 - 5 | SW8260B | VOC | Acetone | 36 J | 5.5 | 22 | 20 | µg/kg | X | Y |
| SO | BVBS1298 | BVBS1298S005 | N | 8/18/2015 | 4 - 5 | SW8260B | VOC | Benzene | 1.1 UJ | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S005 | N | 8/18/2015 | 4 - 5 | SW8260B | VOC | Bromobenzene | 1.1 UJ | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S005 | N | 8/18/2015 | 4 - 5 | SW8260B | VOC | Bromochloromethane | 1.1 UJ | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S005 | N | 8/18/2015 | 4 - 5 | SW8260B | VOC | Bromodichloromethane | 1.1 UJ | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S005 | N | 8/18/2015 | 4 - 5 | SW8260B | VOC | Bromoform | 2.2 UJ | 2.2 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S005 | N | 8/18/2015 | 4 - 5 | SW8260B | VOC | Bromomethane | 2.2 UJ | 2.2 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S005 | N | 8/18/2015 | 4 - 5 | SW8260B | VOC | Carbon tetrachloride | 1.1 UJ | 1.1 | 5.5 | 5 | µg/kg | | N |

APPENDIX G-1

**Analytical Data - August 2015 Post-ISCO Soil Sampling**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | FSP SL | Units | FSP Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1298 | BVBS1298S005 | N | 8/18/2015 | 4 - 5 | SW8260B | VOC | Chlorobenzene | 1.1 UJ | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S005 | N | 8/18/2015 | 4 - 5 | SW8260B | VOC | Chloroethane | 2.2 UJ | 2.2 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S005 | N | 8/18/2015 | 4 - 5 | SW8260B | VOC | Chloromethane | 2.2 UJ | 2.2 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S005 | N | 8/18/2015 | 4 - 5 | SW8260B | VOC | Chlorotrifluoroethylene | 2.2 UJ | 2.2 | 11 | 10 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S005 | N | 8/18/2015 | 4 - 5 | SW8260B | VOC | cis-1,2-Dichloroethene | 1.1 UJ | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S005 | N | 8/18/2015 | 4 - 5 | SW8260B | VOC | cis-1,3-Dichloropropene | 1.1 UJ | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S005 | N | 8/18/2015 | 4 - 5 | SW8260B | VOC | Dibromochloromethane | 1.1 UJ | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S005 | N | 8/18/2015 | 4 - 5 | SW8260B | VOC | Dibromomethane | 1.1 UJ | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S005 | N | 8/18/2015 | 4 - 5 | SW8260B | VOC | Dichlorodifluoromethane | 2.2 UJ | 2.2 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S005 | N | 8/18/2015 | 4 - 5 | SW8260B | VOC | Ethylbenzene | 1.1 UJ | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S005 | N | 8/18/2015 | 4 - 5 | SW8260B | VOC | Hexachlorobutadiene | 2.2 UJ | 2.2 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S005 | N | 8/18/2015 | 4 - 5 | SW8260B | VOC | Isopropylbenzene | 11 J | 1.1 | 5.5 | 5 | µg/kg | X | Y |
| SO | BVBS1298 | BVBS1298S005 | N | 8/18/2015 | 4 - 5 | SW8260B | VOC | m,p-Xylenes | 21 J | 2.2 | 5.5 | 5 | µg/kg | X | Y |
| SO | BVBS1298 | BVBS1298S005 | N | 8/18/2015 | 4 - 5 | SW8260B | VOC | Methylene chloride | 2.2 UJ | 2.2 | 11 | 10 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S005 | N | 8/18/2015 | 4 - 5 | SW8260B | VOC | Methyl-tert-butyl Ether (MTBE) | 1.1 UJ | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S005 | N | 8/18/2015 | 4 - 5 | SW8260B | VOC | n-butylbenzene | 1.1 UJ | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S005 | N | 8/18/2015 | 4 - 5 | SW8260B | VOC | n-Propylbenzene | 16 J | 1.1 | 5.5 | 5 | µg/kg | X | Y |
| SO | BVBS1298 | BVBS1298S005 | N | 8/18/2015 | 4 - 5 | SW8260B | VOC | o-Xylene | 1.1 UJ | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S005 | N | 8/18/2015 | 4 - 5 | SW8260B | VOC | p-Isopropyltoluene | 1.1 UJ | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S005 | N | 8/18/2015 | 4 - 5 | SW8260B | VOC | sec-Butylbenzene | 26 J | 1.1 | 5.5 | 5 | µg/kg | X | Y |
| SO | BVBS1298 | BVBS1298S005 | N | 8/18/2015 | 4 - 5 | SW8260B | VOC | Styrene | 1.1 UJ | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S005 | N | 8/18/2015 | 4 - 5 | SW8260B | VOC | tert-Butylbenzene | 2.6 J | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S005 | N | 8/18/2015 | 4 - 5 | SW8260B | VOC | Tetrachloroethene | 1.1 UJ | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S005 | N | 8/18/2015 | 4 - 5 | SW8260B | VOC | Toluene | 1.9 J | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S005 | N | 8/18/2015 | 4 - 5 | SW8260B | VOC | trans-1,2-Dichloroethene | 1.1 UJ | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S005 | N | 8/18/2015 | 4 - 5 | SW8260B | VOC | trans-1,3-Dichloropropene | 1.1 UJ | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S005 | N | 8/18/2015 | 4 - 5 | SW8260B | VOC | Trichloroethene | 1.1 UJ | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S005 | N | 8/18/2015 | 4 - 5 | SW8260B | VOC | Trichlorofluoromethane | 2.2 UJ | 2.2 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S005 | N | 8/18/2015 | 4 - 5 | SW8260B | VOC | Trichloromethane (Chloroform) | 1.1 UJ | 1.1 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S005 | N | 8/18/2015 | 4 - 5 | SW8260B | VOC | Vinyl chloride | 2.2 UJ | 2.2 | 5.5 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S006 | N | 8/18/2015 | 6 - 8 | SW8015B | HC | Diesel Range Organics (C12-C14) | 5700 = | 2700 | 5400 | 5000 | µg/kg | X | Y |
| SO | BVBS1298 | BVBS1298S006 | N | 8/18/2015 | 6 - 8 | SW8015B | HC | Diesel Range Organics (C15-C20) | 5400 U | 2700 | 5400 | 5000 | µg/kg | X | N |
| SO | BVBS1298 | BVBS1298S006 | N | 8/18/2015 | 6 - 8 | SW8015B | HC | Diesel Range Organics (C21-C30) | 5400 U | 2700 | 5400 | 5000 | µg/kg | X | N |
| SO | BVBS1298 | BVBS1298S006 | N | 8/18/2015 | 6 - 8 | SW8015B | HC | Diesel Range Organics (C8-C11) | 5400 U | 2700 | 5400 | 1000 | µg/kg | X | RL |
| SO | BVBS1298 | BVBS1298S006 | N | 8/18/2015 | 6 - 8 | SW8015B | HC | GRO (C4-C12) | 4500 = | 450 | 910 | 1000 | µg/kg | X | Y |
| SO | BVBS1298 | BVBS1298S006 | N | 8/18/2015 | 6 - 8 | SW8015B | HC | ORO (C31-C40) | 11000 U | 5400 | 11000 | 10000 | µg/kg | X | N |
| SO | BVBS1298 | BVBS1298S006 | N | 8/18/2015 | 6 - 8 | SW8015B | HC | TOTAL EFH(C8-C40) | 15000 = | 2700 | 5400 | 10000 | µg/kg | X | Y |
| SO | BVBS1298 | BVBS1298S006 | N | 8/18/2015 | 6 - 8 | SW8270C-SIM | PAH | 1-Methylnaphthalene | 11 U | 5.4 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1298 | BVBS1298S006 | N | 8/18/2015 | 6 - 8 | SW8270C-SIM | PAH | 2-Methylnaphthalene | 11 U | 5.4 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1298 | BVBS1298S006 | N | 8/18/2015 | 6 - 8 | SW8270C-SIM | PAH | Acenaphthene | 11 U | 5.4 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1298 | BVBS1298S006 | N | 8/18/2015 | 6 - 8 | SW8270C-SIM | PAH | Acenaphthylene | 11 U | 5.4 | 11 | 2.5 | µg/kg | X | RL |

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**Analytical Data - August 2015 Post-ISCO Soil Sampling**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | FSP SL | Units | FSP Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1298 | BVBS1298S006 | N | 8/18/2015 | 6 - 8 | SW8270C-SIM | PAH | Anthracene | 11 U | 5.4 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1298 | BVBS1298S006 | N | 8/18/2015 | 6 - 8 | SW8270C-SIM | PAH | Benzo(a)anthracene | 11 U | 5.4 | 11 | NC | µg/kg | | NC |
| SO | BVBS1298 | BVBS1298S006 | N | 8/18/2015 | 6 - 8 | SW8270C-SIM | PAH | Benzo(a)pyrene | 11 U | 5.4 | 11 | NC | µg/kg | | NC |
| SO | BVBS1298 | BVBS1298S006 | N | 8/18/2015 | 6 - 8 | SW8270C-SIM | PAH | Benzo(b)fluoranthene | 11 U | 5.4 | 11 | NC | µg/kg | | NC |
| SO | BVBS1298 | BVBS1298S006 | N | 8/18/2015 | 6 - 8 | SW8270C-SIM | PAH | Benzo(ghi)perylene | 11 U | 5.4 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1298 | BVBS1298S006 | N | 8/18/2015 | 6 - 8 | SW8270C-SIM | PAH | Benzo(k)fluoranthene | 11 U | 5.4 | 11 | NC | µg/kg | | NC |
| SO | BVBS1298 | BVBS1298S006 | N | 8/18/2015 | 6 - 8 | SW8270C-SIM | PAH | Chrysene | 11 U | 5.4 | 11 | NC | µg/kg | | NC |
| SO | BVBS1298 | BVBS1298S006 | N | 8/18/2015 | 6 - 8 | SW8270C-SIM | PAH | Dibenzo(a,h)anthracene | 11 U | 5.4 | 11 | NC | µg/kg | | NC |
| SO | BVBS1298 | BVBS1298S006 | N | 8/18/2015 | 6 - 8 | SW8270C-SIM | PAH | Fluoranthene | 11 U | 5.4 | 11 | 5.2 | µg/kg | X | RL |
| SO | BVBS1298 | BVBS1298S006 | N | 8/18/2015 | 6 - 8 | SW8270C-SIM | PAH | Fluorene | 11 U | 5.4 | 11 | 3.8 | µg/kg | X | RL |
| SO | BVBS1298 | BVBS1298S006 | N | 8/18/2015 | 6 - 8 | SW8270C-SIM | PAH | Indeno(1,2,3-cd)pyrene | 11 U | 5.4 | 11 | NC | µg/kg | | NC |
| SO | BVBS1298 | BVBS1298S006 | N | 8/18/2015 | 6 - 8 | SW8270C-SIM | PAH | Naphthalene | 11 U | 5.4 | 11 | 3.6 | µg/kg | X | RL |
| SO | BVBS1298 | BVBS1298S006 | N | 8/18/2015 | 6 - 8 | SW8270C-SIM | PAH | PAHTEQM | 0 U | | | 4.47 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S006 | N | 8/18/2015 | 6 - 8 | SW8270C-SIM | PAH | Phenanthrene | 11 U | 5.4 | 11 | 3.9 | µg/kg | X | RL |
| SO | BVBS1298 | BVBS1298S006 | N | 8/18/2015 | 6 - 8 | SW8270C-SIM | PAH | Pyrene | 11 U | 5.4 | 11 | 5.6 | µg/kg | X | N |
| SO | BVBS1298 | BVBS1298S006 | N | 8/18/2015 | 6 - 8 | SW8270C-SIM | PHTH | Bis(2-ethylhexyl)phthalate | 48 = | 11 | 22 | 61 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S006 | N | 8/18/2015 | 6 - 8 | SW8270C-SIM | PHTH | Butyl benzyl phthalate | 22 U | 11 | 22 | 100 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S006 | N | 8/18/2015 | 6 - 8 | SW8270C-SIM | PHTH | Diethyl phthalate | 22 U | 11 | 22 | 27 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S006 | N | 8/18/2015 | 6 - 8 | SW8270C-SIM | PHTH | Dimethyl phthalate | 22 U | 11 | 22 | 27 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S006 | N | 8/18/2015 | 6 - 8 | SW8270C-SIM | PHTH | Di-n-butyl phthalate | 22 U | 11 | 22 | 27 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S006 | N | 8/18/2015 | 6 - 8 | SW8270C-SIM | PHTH | Di-n-octyl phthalate | 22 U | 11 | 22 | 27 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S006 | N | 8/18/2015 | 6 - 8 | SW8260B | SVOC | Diisopropyl ether | 0.93 U | 0.93 | 9.3 | 10 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S006 | N | 8/18/2015 | 6 - 8 | SW8270C-SIM | SVOC | n-Nitrosodimethylamine | 22 U | 11 | 22 | 10 | µg/kg | X | RL |
| SO | BVBS1298 | BVBS1298S006 | N | 8/18/2015 | 6 - 8 | SW8260B | SVOC | tert-Amyl methyl ether | 0.93 U | 0.93 | 4.6 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S006 | N | 8/18/2015 | 6 - 8 | SW8260B | SVOC | tert-Butyl alcohol | 9.3 U | 9.3 | 46 | 50 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S006 | N | 8/18/2015 | 6 - 8 | SW8260B | SVOC | tert-Butyl ethyl ether | 0.93 U | 0.93 | 4.6 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S006 | N | 8/18/2015 | 6 - 8 | SW8260B | VOC | 1,1,1,2-Tetrachloroethane | 0.93 U | 0.93 | 4.6 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S006 | N | 8/18/2015 | 6 - 8 | SW8260B | VOC | 1,1,1-Trichloroethane | 0.93 U | 0.93 | 4.6 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S006 | N | 8/18/2015 | 6 - 8 | SW8260B | VOC | 1,1,2,2-Tetrachloroethane | 0.93 U | 0.93 | 4.6 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S006 | N | 8/18/2015 | 6 - 8 | SW8260B | VOC | 1,1,2-Trichloro-1,2,2-trifluoroethane | 1.9 U | 1.9 | 4.6 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S006 | N | 8/18/2015 | 6 - 8 | SW8260B | VOC | 1,1,2-Trichloroethane | 0.93 U | 0.93 | 4.6 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S006 | N | 8/18/2015 | 6 - 8 | SW8260B | VOC | 1,1-Dichloroethane | 0.93 U | 0.93 | 4.6 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S006 | N | 8/18/2015 | 6 - 8 | SW8260B | VOC | 1,1-Dichloroethene | 0.93 U | 0.93 | 4.6 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S006 | N | 8/18/2015 | 6 - 8 | SW8260B | VOC | 1,1-Dichloropropene | 0.93 U | 0.93 | 4.6 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S006 | N | 8/18/2015 | 6 - 8 | SW8260B | VOC | 1,2,3-Trichlorobenzene | 1.9 U | 1.9 | 4.6 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S006 | N | 8/18/2015 | 6 - 8 | SW8260B | VOC | 1,2,3-Trichloropropane | 1.9 U | 1.9 | 4.6 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S006 | N | 8/18/2015 | 6 - 8 | SW8260B | VOC | 1,2,4-Trichlorobenzene | 1.9 U | 1.9 | 4.6 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S006 | N | 8/18/2015 | 6 - 8 | SW8260B | VOC | 1,2,4-Trimethylbenzene | 0.93 U | 0.93 | 4.6 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S006 | N | 8/18/2015 | 6 - 8 | SW8260B | VOC | 1,2-Dibromo-3-chloropropane | 1.9 U | 1.9 | 9.3 | 10 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S006 | N | 8/18/2015 | 6 - 8 | SW8260B | VOC | 1,2-Dibromoethane (EDB) | 0.93 U | 0.93 | 4.6 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S006 | N | 8/18/2015 | 6 - 8 | SW8260B | VOC | 1,2-Dichlorobenzene | 0.93 U | 0.93 | 4.6 | 5 | µg/kg | | N |

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**Analytical Data - August 2015 Post-ISCO Soil Sampling**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | FSP SL | Units | FSP Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1298 | BVBS1298S006 | N | 8/18/2015 | 6 - 8 | SW8260B | VOC | 1,2-Dichloroethane | 0.93 U | 0.93 | 4.6 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S006 | N | 8/18/2015 | 6 - 8 | SW8260B | VOC | 1,2-Dichloropropane | 0.93 U | 0.93 | 4.6 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S006 | N | 8/18/2015 | 6 - 8 | SW8260B | VOC | 1,3,5-Trimethylbenzene | 0.93 U | 0.93 | 4.6 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S006 | N | 8/18/2015 | 6 - 8 | SW8260B | VOC | 1,3-Dichlorobenzene | 0.93 U | 0.93 | 4.6 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S006 | N | 8/18/2015 | 6 - 8 | SW8260B | VOC | 1,3-Dichloropropane | 0.93 U | 0.93 | 4.6 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S006 | N | 8/18/2015 | 6 - 8 | SW8260B | VOC | 1,4-Dichlorobenzene | 0.93 U | 0.93 | 4.6 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S006 | N | 8/18/2015 | 6 - 8 | SW8260B | VOC | 2,2-Dichloropropane | 1.9 U | 1.9 | 4.6 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S006 | N | 8/18/2015 | 6 - 8 | SW8260B | VOC | 2-Butanone (MEK) | 7 J | 4.6 | 19 | 20 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S006 | N | 8/18/2015 | 6 - 8 | SW8260B | VOC | 2-Chloro-1,1,1-trifluoroethane | 1.9 U | 1.9 | 9.3 | 10 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S006 | N | 8/18/2015 | 6 - 8 | SW8260B | VOC | 2-Chloroethyl vinyl ether | 1.9 U | 1.9 | 9.3 | 10 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S006 | N | 8/18/2015 | 6 - 8 | SW8260B | VOC | 2-Chlorotoluene | 0.93 U | 0.93 | 4.6 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S006 | N | 8/18/2015 | 6 - 8 | SW8260B | VOC | 2-Hexanone | 4.6 U | 4.6 | 9.3 | 10 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S006 | N | 8/18/2015 | 6 - 8 | SW8260B | VOC | 4-Chlorotoluene | 0.93 U | 0.93 | 9.3 | 10 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S006 | N | 8/18/2015 | 6 - 8 | SW8260B | VOC | 4-Methyl-2-pentanone (MIBK) | 4.6 U | 4.6 | 9.3 | 10 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S006 | N | 8/18/2015 | 6 - 8 | SW8260B | VOC | Acetone | 36 = | 4.6 | 19 | 20 | µg/kg | X | Y |
| SO | BVBS1298 | BVBS1298S006 | N | 8/18/2015 | 6 - 8 | SW8260B | VOC | Benzene | 0.93 U | 0.93 | 4.6 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S006 | N | 8/18/2015 | 6 - 8 | SW8260B | VOC | Bromobenzene | 0.93 U | 0.93 | 4.6 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S006 | N | 8/18/2015 | 6 - 8 | SW8260B | VOC | Bromochloromethane | 0.93 U | 0.93 | 4.6 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S006 | N | 8/18/2015 | 6 - 8 | SW8260B | VOC | Bromodichloromethane | 0.93 U | 0.93 | 4.6 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S006 | N | 8/18/2015 | 6 - 8 | SW8260B | VOC | Bromoform | 1.9 U | 1.9 | 4.6 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S006 | N | 8/18/2015 | 6 - 8 | SW8260B | VOC | Bromomethane | 1.9 U | 1.9 | 4.6 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S006 | N | 8/18/2015 | 6 - 8 | SW8260B | VOC | Carbon tetrachloride | 0.93 U | 0.93 | 4.6 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S006 | N | 8/18/2015 | 6 - 8 | SW8260B | VOC | Chlorobenzene | 0.93 U | 0.93 | 4.6 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S006 | N | 8/18/2015 | 6 - 8 | SW8260B | VOC | Chloroethane | 1.9 U | 1.9 | 4.6 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S006 | N | 8/18/2015 | 6 - 8 | SW8260B | VOC | Chloromethane | 1.9 U | 1.9 | 4.6 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S006 | N | 8/18/2015 | 6 - 8 | SW8260B | VOC | Chlorotrifluoroethylene | 1.9 U | 1.9 | 9.3 | 10 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S006 | N | 8/18/2015 | 6 - 8 | SW8260B | VOC | cis-1,2-Dichloroethene | 0.93 U | 0.93 | 4.6 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S006 | N | 8/18/2015 | 6 - 8 | SW8260B | VOC | cis-1,3-Dichloropropene | 0.93 U | 0.93 | 4.6 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S006 | N | 8/18/2015 | 6 - 8 | SW8260B | VOC | Dibromochloromethane | 0.93 U | 0.93 | 4.6 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S006 | N | 8/18/2015 | 6 - 8 | SW8260B | VOC | Dibromomethane | 0.93 U | 0.93 | 4.6 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S006 | N | 8/18/2015 | 6 - 8 | SW8260B | VOC | Dichlorodifluoromethane | 1.9 U | 1.9 | 4.6 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S006 | N | 8/18/2015 | 6 - 8 | SW8260B | VOC | Ethylbenzene | 0.93 U | 0.93 | 4.6 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S006 | N | 8/18/2015 | 6 - 8 | SW8260B | VOC | Hexachlorobutadiene | 1.9 U | 1.9 | 4.6 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S006 | N | 8/18/2015 | 6 - 8 | SW8260B | VOC | Isopropylbenzene | 0.93 U | 0.93 | 4.6 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S006 | N | 8/18/2015 | 6 - 8 | SW8260B | VOC | m,p-Xylenes | 1.9 U | 1.9 | 4.6 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S006 | N | 8/18/2015 | 6 - 8 | SW8260B | VOC | Methylene chloride | 1.9 U | 1.9 | 9.3 | 10 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S006 | N | 8/18/2015 | 6 - 8 | SW8260B | VOC | Methyl-tert-butyl Ether (MTBE) | 0.93 U | 0.93 | 4.6 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S006 | N | 8/18/2015 | 6 - 8 | SW8260B | VOC | n-butylbenzene | 0.93 U | 0.93 | 4.6 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S006 | N | 8/18/2015 | 6 - 8 | SW8260B | VOC | n-Propylbenzene | 0.93 U | 0.93 | 4.6 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S006 | N | 8/18/2015 | 6 - 8 | SW8260B | VOC | o-Xylene | 0.93 U | 0.93 | 4.6 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S006 | N | 8/18/2015 | 6 - 8 | SW8260B | VOC | p-Isopropyltoluene | 0.93 U | 0.93 | 4.6 | 5 | µg/kg | | N |

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**Analytical Data - August 2015 Post-ISCO Soil Sampling**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | FSP SL | Units | FSP Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1298 | BVBS1298S006 | N | 8/18/2015 | 6 - 8 | SW8260B | VOC | sec-Butylbenzene | 0.93 U | 0.93 | 4.6 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S006 | N | 8/18/2015 | 6 - 8 | SW8260B | VOC | Styrene | 0.93 U | 0.93 | 4.6 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S006 | N | 8/18/2015 | 6 - 8 | SW8260B | VOC | tert-Butylbenzene | 0.93 U | 0.93 | 4.6 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S006 | N | 8/18/2015 | 6 - 8 | SW8260B | VOC | Tetrachloroethene | 0.93 U | 0.93 | 4.6 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S006 | N | 8/18/2015 | 6 - 8 | SW8260B | VOC | Toluene | 0.93 U | 0.93 | 4.6 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S006 | N | 8/18/2015 | 6 - 8 | SW8260B | VOC | trans-1,2-Dichloroethene | 0.93 U | 0.93 | 4.6 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S006 | N | 8/18/2015 | 6 - 8 | SW8260B | VOC | trans-1,3-Dichloropropene | 0.93 U | 0.93 | 4.6 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S006 | N | 8/18/2015 | 6 - 8 | SW8260B | VOC | Trichloroethene | 0.93 U | 0.93 | 4.6 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S006 | N | 8/18/2015 | 6 - 8 | SW8260B | VOC | Trichlorofluoromethane | 1.9 U | 1.9 | 4.6 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S006 | N | 8/18/2015 | 6 - 8 | SW8260B | VOC | Trichloromethane (Chloroform) | 0.93 U | 0.93 | 4.6 | 5 | µg/kg | | N |
| SO | BVBS1298 | BVBS1298S006 | N | 8/18/2015 | 6 - 8 | SW8260B | VOC | Vinyl chloride | 1.9 U | 1.9 | 4.6 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S005 | N | 8/18/2015 | 4 - 5.5 | SW8015B | HC | Diesel Range Organics (C12-C14) | 6300000 = | 59000 | 120000 | 5000 | µg/kg | X | Y |
| SO | BVBS1299 | BVBS1299S005 | N | 8/18/2015 | 4 - 5.5 | SW8015B | HC | Diesel Range Organics (C15-C20) | 1300000 = | 59000 | 120000 | 5000 | µg/kg | X | Y |
| SO | BVBS1299 | BVBS1299S005 | N | 8/18/2015 | 4 - 5.5 | SW8015B | HC | Diesel Range Organics (C21-C30) | 120000 U | 59000 | 120000 | 5000 | µg/kg | X | RL |
| SO | BVBS1299 | BVBS1299S005 | N | 8/18/2015 | 4 - 5.5 | SW8015B | HC | Diesel Range Organics (C8-C11) | 1200000 = | 59000 | 120000 | 1000 | µg/kg | X | Y |
| SO | BVBS1299 | BVBS1299S005 | N | 8/18/2015 | 4 - 5.5 | SW8015B | HC | GRO (C4-C12) | 560000 = | 11000 | 23000 | 1000 | µg/kg | X | Y |
| SO | BVBS1299 | BVBS1299S005 | N | 8/18/2015 | 4 - 5.5 | SW8015B | HC | ORO (C31-C40) | 230000 U | 120000 | 230000 | 10000 | µg/kg | X | RL |
| SO | BVBS1299 | BVBS1299S005 | N | 8/18/2015 | 4 - 5.5 | SW8015B | HC | TOTAL EFH(C8-C40) | 9000000 = | 59000 | 120000 | 10000 | µg/kg | X | Y |
| SO | BVBS1299 | BVBS1299S005 | N | 8/18/2015 | 4 - 5.5 | SW8270C-SIM | PAH | 1-Methylnaphthalene | 12 U | 5.9 | 12 | 2.5 | µg/kg | X | RL |
| SO | BVBS1299 | BVBS1299S005 | N | 8/18/2015 | 4 - 5.5 | SW8270C-SIM | PAH | 2-Methylnaphthalene | 12 U | 5.9 | 12 | 2.5 | µg/kg | X | RL |
| SO | BVBS1299 | BVBS1299S005 | N | 8/18/2015 | 4 - 5.5 | SW8270C-SIM | PAH | Acenaphthene | 12 U | 5.9 | 12 | 2.5 | µg/kg | X | RL |
| SO | BVBS1299 | BVBS1299S005 | N | 8/18/2015 | 4 - 5.5 | SW8270C-SIM | PAH | Acenaphthylene | 12 U | 5.9 | 12 | 2.5 | µg/kg | X | RL |
| SO | BVBS1299 | BVBS1299S005 | N | 8/18/2015 | 4 - 5.5 | SW8270C-SIM | PAH | Anthracene | 52 = | 5.9 | 12 | 2.5 | µg/kg | X | Y |
| SO | BVBS1299 | BVBS1299S005 | N | 8/18/2015 | 4 - 5.5 | SW8270C-SIM | PAH | Benzo(a)anthracene | 45 = | 5.9 | 12 | NC | µg/kg | | NC |
| SO | BVBS1299 | BVBS1299S005 | N | 8/18/2015 | 4 - 5.5 | SW8270C-SIM | PAH | Benzo(a)pyrene | 50 = | 5.9 | 12 | NC | µg/kg | | NC |
| SO | BVBS1299 | BVBS1299S005 | N | 8/18/2015 | 4 - 5.5 | SW8270C-SIM | PAH | Benzo(b)fluoranthene | 60 = | 5.9 | 12 | NC | µg/kg | | NC |
| SO | BVBS1299 | BVBS1299S005 | N | 8/18/2015 | 4 - 5.5 | SW8270C-SIM | PAH | Benzo(ghi)perylene | 67 = | 5.9 | 12 | 2.5 | µg/kg | X | Y |
| SO | BVBS1299 | BVBS1299S005 | N | 8/18/2015 | 4 - 5.5 | SW8270C-SIM | PAH | Benzo(k)fluoranthene | 14 = | 5.9 | 12 | NC | µg/kg | | NC |
| SO | BVBS1299 | BVBS1299S005 | N | 8/18/2015 | 4 - 5.5 | SW8270C-SIM | PAH | Chrysene | 32 = | 5.9 | 12 | NC | µg/kg | | NC |
| SO | BVBS1299 | BVBS1299S005 | N | 8/18/2015 | 4 - 5.5 | SW8270C-SIM | PAH | Dibenzo(a,h)anthracene | 12 U | 5.9 | 12 | NC | µg/kg | | NC |
| SO | BVBS1299 | BVBS1299S005 | N | 8/18/2015 | 4 - 5.5 | SW8270C-SIM | PAH | Fluoranthene | 280 = | 5.9 | 12 | 5.2 | µg/kg | X | Y |
| SO | BVBS1299 | BVBS1299S005 | N | 8/18/2015 | 4 - 5.5 | SW8270C-SIM | PAH | Fluorene | 110 = | 5.9 | 12 | 3.8 | µg/kg | X | Y |
| SO | BVBS1299 | BVBS1299S005 | N | 8/18/2015 | 4 - 5.5 | SW8270C-SIM | PAH | Indeno(1,2,3-cd)pyrene | 32 = | 5.9 | 12 | NC | µg/kg | | NC |
| SO | BVBS1299 | BVBS1299S005 | N | 8/18/2015 | 4 - 5.5 | SW8270C-SIM | PAH | Naphthalene | 99 = | 5.9 | 12 | 3.6 | µg/kg | X | Y |
| SO | BVBS1299 | BVBS1299S005 | N | 8/18/2015 | 4 - 5.5 | SW8270C-SIM | PAH | PAHTEQM | 65.42 = | | | 4.47 | µg/kg | X | Y |
| SO | BVBS1299 | BVBS1299S005 | N | 8/18/2015 | 4 - 5.5 | SW8270C-SIM | PAH | Phenanthrene | 200 = | 5.9 | 12 | 3.9 | µg/kg | X | Y |
| SO | BVBS1299 | BVBS1299S005 | N | 8/18/2015 | 4 - 5.5 | SW8270C-SIM | PAH | Pyrene | 390 = | 5.9 | 12 | 5.6 | µg/kg | X | Y |
| SO | BVBS1299 | BVBS1299S005 | N | 8/18/2015 | 4 - 5.5 | SW8270C-SIM | PHTH | Bis(2-ethylhexyl)phthalate | 1700 = | 12 | 23 | 61 | µg/kg | X | Y |
| SO | BVBS1299 | BVBS1299S005 | N | 8/18/2015 | 4 - 5.5 | SW8270C-SIM | PHTH | Butyl benzyl phthalate | 23 U | 12 | 23 | 100 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S005 | N | 8/18/2015 | 4 - 5.5 | SW8270C-SIM | PHTH | Diethyl phthalate | 23 U | 12 | 23 | 27 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S005 | N | 8/18/2015 | 4 - 5.5 | SW8270C-SIM | PHTH | Dimethyl phthalate | 23 U | 12 | 23 | 27 | µg/kg | | N |

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**Analytical Data - August 2015 Post-ISCO Soil Sampling**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | FSP SL | Units | FSP Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1299 | BVBS1299S005 | N | 8/18/2015 | 4 - 5.5 | SW8270C-SIM | PHTH | Di-n-butyl phthalate | 23 U | 12 | 23 | 27 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S005 | N | 8/18/2015 | 4 - 5.5 | SW8270C-SIM | PHTH | Di-n-octyl phthalate | 23 U | 12 | 23 | 27 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S005 | N | 8/18/2015 | 4 - 5.5 | SW8260B | SVOC | Diisopropyl ether | 1.2 UJ | 1.2 | 12 | 10 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S005 | N | 8/18/2015 | 4 - 5.5 | SW8270C-SIM | SVOC | n-Nitrosodimethylamine | 23 U | 12 | 23 | 10 | µg/kg | X | RL |
| SO | BVBS1299 | BVBS1299S005 | N | 8/18/2015 | 4 - 5.5 | SW8260B | SVOC | tert-Amyl methyl ether | 1.2 UJ | 1.2 | 5.9 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S005 | N | 8/18/2015 | 4 - 5.5 | SW8260B | SVOC | tert-Butyl alcohol | 12 UJ | 12 | 59 | 50 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S005 | N | 8/18/2015 | 4 - 5.5 | SW8260B | SVOC | tert-Butyl ethyl ether | 1.2 UJ | 1.2 | 5.9 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S005 | N | 8/18/2015 | 4 - 5.5 | SW8260B | VOC | 1,1,1,2-Tetrachloroethane | 1.2 UJ | 1.2 | 5.9 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S005 | N | 8/18/2015 | 4 - 5.5 | SW8260B | VOC | 1,1,1-Trichloroethane | 1.2 UJ | 1.2 | 5.9 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S005 | N | 8/18/2015 | 4 - 5.5 | SW8260B | VOC | 1,1,2,2-Tetrachloroethane | 1.2 UJ | 1.2 | 5.9 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S005 | N | 8/18/2015 | 4 - 5.5 | SW8260B | VOC | 1,1,2-Trichloro-1,2,2-trifluoroethane | 2.4 UJ | 2.4 | 5.9 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S005 | N | 8/18/2015 | 4 - 5.5 | SW8260B | VOC | 1,1,2-Trichloroethane | 1.2 UJ | 1.2 | 5.9 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S005 | N | 8/18/2015 | 4 - 5.5 | SW8260B | VOC | 1,1-Dichloroethane | 1.2 UJ | 1.2 | 5.9 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S005 | N | 8/18/2015 | 4 - 5.5 | SW8260B | VOC | 1,1-Dichloroethene | 1.2 UJ | 1.2 | 5.9 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S005 | N | 8/18/2015 | 4 - 5.5 | SW8260B | VOC | 1,1-Dichloropropene | 1.2 UJ | 1.2 | 5.9 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S005 | N | 8/18/2015 | 4 - 5.5 | SW8260B | VOC | 1,2,3-Trichlorobenzene | 2.4 UJ | 2.4 | 5.9 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S005 | N | 8/18/2015 | 4 - 5.5 | SW8260B | VOC | 1,2,3-Trichloropropane | 2.4 UJ | 2.4 | 5.9 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S005 | N | 8/18/2015 | 4 - 5.5 | SW8260B | VOC | 1,2,4-Trichlorobenzene | 2.4 UJ | 2.4 | 5.9 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S005 | N | 8/18/2015 | 4 - 5.5 | SW8260B | VOC | 1,2,4-Trimethylbenzene | 1.2 UJ | 1.2 | 5.9 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S005 | N | 8/18/2015 | 4 - 5.5 | SW8260B | VOC | 1,2-Dibromo-3-chloropropane | 2.4 UJ | 2.4 | 12 | 10 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S005 | N | 8/18/2015 | 4 - 5.5 | SW8260B | VOC | 1,2-Dibromoethane (EDB) | 1.2 UJ | 1.2 | 5.9 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S005 | N | 8/18/2015 | 4 - 5.5 | SW8260B | VOC | 1,2-Dichlorobenzene | 1.2 UJ | 1.2 | 5.9 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S005 | N | 8/18/2015 | 4 - 5.5 | SW8260B | VOC | 1,2-Dichloroethane | 1.2 UJ | 1.2 | 5.9 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S005 | N | 8/18/2015 | 4 - 5.5 | SW8260B | VOC | 1,2-Dichloropropane | 1.2 UJ | 1.2 | 5.9 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S005 | N | 8/18/2015 | 4 - 5.5 | SW8260B | VOC | 1,3,5-Trimethylbenzene | 1.2 UJ | 1.2 | 5.9 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S005 | N | 8/18/2015 | 4 - 5.5 | SW8260B | VOC | 1,3-Dichlorobenzene | 1.2 UJ | 1.2 | 5.9 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S005 | N | 8/18/2015 | 4 - 5.5 | SW8260B | VOC | 1,3-Dichloropropane | 1.2 UJ | 1.2 | 5.9 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S005 | N | 8/18/2015 | 4 - 5.5 | SW8260B | VOC | 1,4-Dichlorobenzene | 1.2 UJ | 1.2 | 5.9 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S005 | N | 8/18/2015 | 4 - 5.5 | SW8260B | VOC | 2,2-Dichloropropane | 2.4 UJ | 2.4 | 5.9 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S005 | N | 8/18/2015 | 4 - 5.5 | SW8260B | VOC | 2-Butanone (MEK) | 49 J | 5.9 | 24 | 20 | µg/kg | X | Y |
| SO | BVBS1299 | BVBS1299S005 | N | 8/18/2015 | 4 - 5.5 | SW8260B | VOC | 2-Chloro-1,1,1-trifluoroethane | 2.4 UJ | 2.4 | 12 | 10 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S005 | N | 8/18/2015 | 4 - 5.5 | SW8260B | VOC | 2-Chloroethyl vinyl ether | 2.4 UJ | 2.4 | 12 | 10 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S005 | N | 8/18/2015 | 4 - 5.5 | SW8260B | VOC | 2-Chlorotoluene | 1.2 UJ | 1.2 | 5.9 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S005 | N | 8/18/2015 | 4 - 5.5 | SW8260B | VOC | 2-Hexanone | 5.9 UJ | 5.9 | 12 | 10 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S005 | N | 8/18/2015 | 4 - 5.5 | SW8260B | VOC | 4-Chlorotoluene | 1.2 UJ | 1.2 | 12 | 10 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S005 | N | 8/18/2015 | 4 - 5.5 | SW8260B | VOC | 4-Methyl-2-pentanone (MIBK) | 5.9 UJ | 5.9 | 12 | 10 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S005 | N | 8/18/2015 | 4 - 5.5 | SW8260B | VOC | Acetone | 310 J | 5.9 | 24 | 20 | µg/kg | X | Y |
| SO | BVBS1299 | BVBS1299S005 | N | 8/18/2015 | 4 - 5.5 | SW8260B | VOC | Benzene | 31 J | 1.2 | 5.9 | 5 | µg/kg | X | Y |
| SO | BVBS1299 | BVBS1299S005 | N | 8/18/2015 | 4 - 5.5 | SW8260B | VOC | Bromobenzene | 1.2 UJ | 1.2 | 5.9 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S005 | N | 8/18/2015 | 4 - 5.5 | SW8260B | VOC | Bromochloromethane | 1.2 UJ | 1.2 | 5.9 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S005 | N | 8/18/2015 | 4 - 5.5 | SW8260B | VOC | Bromodichloromethane | 1.2 UJ | 1.2 | 5.9 | 5 | µg/kg | | N |

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**Analytical Data - August 2015 Post-ISCO Soil Sampling**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | FSP SL | Units | FSP Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1299 | BVBS1299S005 | N | 8/18/2015 | 4 - 5.5 | SW8260B | VOC | Bromoform | 2.4 UJ | 2.4 | 5.9 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S005 | N | 8/18/2015 | 4 - 5.5 | SW8260B | VOC | Bromomethane | 2.4 UJ | 2.4 | 5.9 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S005 | N | 8/18/2015 | 4 - 5.5 | SW8260B | VOC | Carbon tetrachloride | 1.2 UJ | 1.2 | 5.9 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S005 | N | 8/18/2015 | 4 - 5.5 | SW8260B | VOC | Chlorobenzene | 1.2 UJ | 1.2 | 5.9 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S005 | N | 8/18/2015 | 4 - 5.5 | SW8260B | VOC | Chloroethane | 2.4 UJ | 2.4 | 5.9 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S005 | N | 8/18/2015 | 4 - 5.5 | SW8260B | VOC | Chloromethane | 2.4 UJ | 2.4 | 5.9 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S005 | N | 8/18/2015 | 4 - 5.5 | SW8260B | VOC | Chlorotrifluoroethylene | 2.4 UJ | 2.4 | 12 | 10 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S005 | N | 8/18/2015 | 4 - 5.5 | SW8260B | VOC | cis-1,2-Dichloroethene | 1.7 J | 1.2 | 5.9 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S005 | N | 8/18/2015 | 4 - 5.5 | SW8260B | VOC | cis-1,3-Dichloropropene | 1.2 UJ | 1.2 | 5.9 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S005 | N | 8/18/2015 | 4 - 5.5 | SW8260B | VOC | Dibromochloromethane | 1.2 UJ | 1.2 | 5.9 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S005 | N | 8/18/2015 | 4 - 5.5 | SW8260B | VOC | Dibromomethane | 1.2 UJ | 1.2 | 5.9 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S005 | N | 8/18/2015 | 4 - 5.5 | SW8260B | VOC | Dichlorodifluoromethane | 2.4 UJ | 2.4 | 5.9 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S005 | N | 8/18/2015 | 4 - 5.5 | SW8260B | VOC | Ethylbenzene | 4.9 J | 1.2 | 5.9 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S005 | N | 8/18/2015 | 4 - 5.5 | SW8260B | VOC | Hexachlorobutadiene | 2.4 UJ | 2.4 | 5.9 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S005 | N | 8/18/2015 | 4 - 5.5 | SW8260B | VOC | Isopropylbenzene | 1.3 J | 1.2 | 5.9 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S005 | N | 8/18/2015 | 4 - 5.5 | SW8260B | VOC | m,p-Xylenes | 2.4 UJ | 2.4 | 5.9 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S005 | N | 8/18/2015 | 4 - 5.5 | SW8260B | VOC | Methylene chloride | 2.4 UJ | 2.4 | 12 | 10 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S005 | N | 8/18/2015 | 4 - 5.5 | SW8260B | VOC | Methyl-tert-butyl Ether (MTBE) | 1.2 UJ | 1.2 | 5.9 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S005 | N | 8/18/2015 | 4 - 5.5 | SW8260B | VOC | n-butylbenzene | 1.2 UJ | 1.2 | 5.9 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S005 | N | 8/18/2015 | 4 - 5.5 | SW8260B | VOC | n-Propylbenzene | 1.2 UJ | 1.2 | 5.9 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S005 | N | 8/18/2015 | 4 - 5.5 | SW8260B | VOC | o-Xylene | 1.2 UJ | 1.2 | 5.9 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S005 | N | 8/18/2015 | 4 - 5.5 | SW8260B | VOC | p-Isopropyltoluene | 1.2 UJ | 1.2 | 5.9 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S005 | N | 8/18/2015 | 4 - 5.5 | SW8260B | VOC | sec-Butylbenzene | 14 J | 1.2 | 5.9 | 5 | µg/kg | X | Y |
| SO | BVBS1299 | BVBS1299S005 | N | 8/18/2015 | 4 - 5.5 | SW8260B | VOC | Styrene | 1.2 UJ | 1.2 | 5.9 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S005 | N | 8/18/2015 | 4 - 5.5 | SW8260B | VOC | tert-Butylbenzene | 1.5 J | 1.2 | 5.9 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S005 | N | 8/18/2015 | 4 - 5.5 | SW8260B | VOC | Tetrachloroethene | 1.2 UJ | 1.2 | 5.9 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S005 | N | 8/18/2015 | 4 - 5.5 | SW8260B | VOC | Toluene | 1.2 UJ | 1.2 | 5.9 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S005 | N | 8/18/2015 | 4 - 5.5 | SW8260B | VOC | trans-1,2-Dichloroethene | 1.2 UJ | 1.2 | 5.9 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S005 | N | 8/18/2015 | 4 - 5.5 | SW8260B | VOC | trans-1,3-Dichloropropene | 1.2 UJ | 1.2 | 5.9 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S005 | N | 8/18/2015 | 4 - 5.5 | SW8260B | VOC | Trichloroethene | 5 J | 1.2 | 5.9 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S005 | N | 8/18/2015 | 4 - 5.5 | SW8260B | VOC | Trichlorofluoromethane | 2.4 UJ | 2.4 | 5.9 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S005 | N | 8/18/2015 | 4 - 5.5 | SW8260B | VOC | Trichloromethane (Chloroform) | 1.2 UJ | 1.2 | 5.9 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S005 | N | 8/18/2015 | 4 - 5.5 | SW8260B | VOC | Vinyl chloride | 2.4 UJ | 2.4 | 5.9 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S006 | N | 8/18/2015 | 7 - 8 | SW8015B | HC | Diesel Range Organics (C12-C14) | 5400 U | 2700 | 5400 | 5000 | µg/kg | X | N |
| SO | BVBS1299 | BVBS1299S006 | N | 8/18/2015 | 7 - 8 | SW8015B | HC | Diesel Range Organics (C15-C20) | 5400 U | 2700 | 5400 | 5000 | µg/kg | X | N |
| SO | BVBS1299 | BVBS1299S006 | N | 8/18/2015 | 7 - 8 | SW8015B | HC | Diesel Range Organics (C21-C30) | 5400 U | 2700 | 5400 | 5000 | µg/kg | X | N |
| SO | BVBS1299 | BVBS1299S006 | N | 8/18/2015 | 7 - 8 | SW8015B | HC | Diesel Range Organics (C8-C11) | 5400 U | 2700 | 5400 | 1000 | µg/kg | X | RL |
| SO | BVBS1299 | BVBS1299S006 | N | 8/18/2015 | 7 - 8 | SW8015B | HC | GRO (C4-C12) | 1000 U | 500 | 1000 | 1000 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S006 | N | 8/18/2015 | 7 - 8 | SW8015B | HC | ORO (C31-C40) | 11000 U | 5400 | 11000 | 10000 | µg/kg | X | N |
| SO | BVBS1299 | BVBS1299S006 | N | 8/18/2015 | 7 - 8 | SW8015B | HC | TOTAL EFH(C8-C40) | 4700 J | 2700 | 5400 | 10000 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S006 | N | 8/18/2015 | 7 - 8 | SW8270C-SIM | PAH | 1-Methylnaphthalene | 11 U | 5.4 | 11 | 2.5 | µg/kg | X | RL |

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**Analytical Data - August 2015 Post-ISCO Soil Sampling**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | FSP SL | Units | FSP Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1299 | BVBS1299S006 | N | 8/18/2015 | 7 - 8 | SW8270C-SIM | PAH | 2-Methylnaphthalene | 11 U | 5.4 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1299 | BVBS1299S006 | N | 8/18/2015 | 7 - 8 | SW8270C-SIM | PAH | Acenaphthene | 11 U | 5.4 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1299 | BVBS1299S006 | N | 8/18/2015 | 7 - 8 | SW8270C-SIM | PAH | Acenaphthylene | 11 U | 5.4 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1299 | BVBS1299S006 | N | 8/18/2015 | 7 - 8 | SW8270C-SIM | PAH | Anthracene | 11 U | 5.4 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1299 | BVBS1299S006 | N | 8/18/2015 | 7 - 8 | SW8270C-SIM | PAH | Benzo(a)anthracene | 11 U | 5.4 | 11 | NC | µg/kg | | NC |
| SO | BVBS1299 | BVBS1299S006 | N | 8/18/2015 | 7 - 8 | SW8270C-SIM | PAH | Benzo(a)pyrene | 11 U | 5.4 | 11 | NC | µg/kg | | NC |
| SO | BVBS1299 | BVBS1299S006 | N | 8/18/2015 | 7 - 8 | SW8270C-SIM | PAH | Benzo(b)fluoranthene | 11 U | 5.4 | 11 | NC | µg/kg | | NC |
| SO | BVBS1299 | BVBS1299S006 | N | 8/18/2015 | 7 - 8 | SW8270C-SIM | PAH | Benzo(ghi)perylene | 11 U | 5.4 | 11 | 2.5 | µg/kg | X | RL |
| SO | BVBS1299 | BVBS1299S006 | N | 8/18/2015 | 7 - 8 | SW8270C-SIM | PAH | Benzo(k)fluoranthene | 11 U | 5.4 | 11 | NC | µg/kg | | NC |
| SO | BVBS1299 | BVBS1299S006 | N | 8/18/2015 | 7 - 8 | SW8270C-SIM | PAH | Chrysene | 11 U | 5.4 | 11 | NC | µg/kg | | NC |
| SO | BVBS1299 | BVBS1299S006 | N | 8/18/2015 | 7 - 8 | SW8270C-SIM | PAH | Dibenzo(a,h)anthracene | 11 U | 5.4 | 11 | NC | µg/kg | | NC |
| SO | BVBS1299 | BVBS1299S006 | N | 8/18/2015 | 7 - 8 | SW8270C-SIM | PAH | Fluoranthene | 11 U | 5.4 | 11 | 5.2 | µg/kg | X | RL |
| SO | BVBS1299 | BVBS1299S006 | N | 8/18/2015 | 7 - 8 | SW8270C-SIM | PAH | Fluorene | 11 U | 5.4 | 11 | 3.8 | µg/kg | X | RL |
| SO | BVBS1299 | BVBS1299S006 | N | 8/18/2015 | 7 - 8 | SW8270C-SIM | PAH | Indeno(1,2,3-cd)pyrene | 11 U | 5.4 | 11 | NC | µg/kg | | NC |
| SO | BVBS1299 | BVBS1299S006 | N | 8/18/2015 | 7 - 8 | SW8270C-SIM | PAH | Naphthalene | 11 U | 5.4 | 11 | 3.6 | µg/kg | X | RL |
| SO | BVBS1299 | BVBS1299S006 | N | 8/18/2015 | 7 - 8 | SW8270C-SIM | PAH | PAHTEQM | 0 U | | | 4.47 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S006 | N | 8/18/2015 | 7 - 8 | SW8270C-SIM | PAH | Phenanthrene | 11 U | 5.4 | 11 | 3.9 | µg/kg | X | RL |
| SO | BVBS1299 | BVBS1299S006 | N | 8/18/2015 | 7 - 8 | SW8270C-SIM | PAH | Pyrene | 11 U | 5.4 | 11 | 5.6 | µg/kg | X | N |
| SO | BVBS1299 | BVBS1299S006 | N | 8/18/2015 | 7 - 8 | SW8270C-SIM | PHTH | Bis(2-ethylhexyl)phthalate | 21 U | 11 | 21 | 61 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S006 | N | 8/18/2015 | 7 - 8 | SW8270C-SIM | PHTH | Butyl benzyl phthalate | 21 U | 11 | 21 | 100 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S006 | N | 8/18/2015 | 7 - 8 | SW8270C-SIM | PHTH | Diethyl phthalate | 21 U | 11 | 21 | 27 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S006 | N | 8/18/2015 | 7 - 8 | SW8270C-SIM | PHTH | Dimethyl phthalate | 21 U | 11 | 21 | 27 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S006 | N | 8/18/2015 | 7 - 8 | SW8270C-SIM | PHTH | Di-n-butyl phthalate | 21 U | 11 | 21 | 27 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S006 | N | 8/18/2015 | 7 - 8 | SW8270C-SIM | PHTH | Di-n-octyl phthalate | 21 U | 11 | 21 | 27 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S006 | N | 8/18/2015 | 7 - 8 | SW8260B | SVOC | Diisopropyl ether | 0.98 U | 0.98 | 9.8 | 10 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S006 | N | 8/18/2015 | 7 - 8 | SW8270C-SIM | SVOC | n-Nitrosodimethylamine | 21 U | 11 | 21 | 10 | µg/kg | X | RL |
| SO | BVBS1299 | BVBS1299S006 | N | 8/18/2015 | 7 - 8 | SW8260B | SVOC | tert-Amyl methyl ether | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S006 | N | 8/18/2015 | 7 - 8 | SW8260B | SVOC | tert-Butyl alcohol | 11 J | 9.8 | 49 | 50 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S006 | N | 8/18/2015 | 7 - 8 | SW8260B | SVOC | tert-Butyl ethyl ether | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S006 | N | 8/18/2015 | 7 - 8 | SW8260B | VOC | 1,1,1,2-Tetrachloroethane | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S006 | N | 8/18/2015 | 7 - 8 | SW8260B | VOC | 1,1,1-Trichloroethane | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S006 | N | 8/18/2015 | 7 - 8 | SW8260B | VOC | 1,1,2,2-Tetrachloroethane | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S006 | N | 8/18/2015 | 7 - 8 | SW8260B | VOC | 1,1,2-Trichloro-1,2,2-trifluoroethane | 2 U | 2 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S006 | N | 8/18/2015 | 7 - 8 | SW8260B | VOC | 1,1,2-Trichloroethane | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S006 | N | 8/18/2015 | 7 - 8 | SW8260B | VOC | 1,1-Dichloroethane | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S006 | N | 8/18/2015 | 7 - 8 | SW8260B | VOC | 1,1-Dichloroethene | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S006 | N | 8/18/2015 | 7 - 8 | SW8260B | VOC | 1,1-Dichloropropene | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S006 | N | 8/18/2015 | 7 - 8 | SW8260B | VOC | 1,2,3-Trichlorobenzene | 2 U | 2 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S006 | N | 8/18/2015 | 7 - 8 | SW8260B | VOC | 1,2,3-Trichloropropane | 2 U | 2 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S006 | N | 8/18/2015 | 7 - 8 | SW8260B | VOC | 1,2,4-Trichlorobenzene | 2 U | 2 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S006 | N | 8/18/2015 | 7 - 8 | SW8260B | VOC | 1,2,4-Trimethylbenzene | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |

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**Analytical Data - August 2015 Post-ISCO Soil Sampling**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | FSP SL | Units | FSP Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1299 | BVBS1299S006 | N | 8/18/2015 | 7 - 8 | SW8260B | VOC | 1,2-Dibromo-3-chloropropane | 2 U | 2 | 9.8 | 10 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S006 | N | 8/18/2015 | 7 - 8 | SW8260B | VOC | 1,2-Dibromoethane (EDB) | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S006 | N | 8/18/2015 | 7 - 8 | SW8260B | VOC | 1,2-Dichlorobenzene | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S006 | N | 8/18/2015 | 7 - 8 | SW8260B | VOC | 1,2-Dichloroethane | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S006 | N | 8/18/2015 | 7 - 8 | SW8260B | VOC | 1,2-Dichloropropane | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S006 | N | 8/18/2015 | 7 - 8 | SW8260B | VOC | 1,3,5-Trimethylbenzene | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S006 | N | 8/18/2015 | 7 - 8 | SW8260B | VOC | 1,3-Dichlorobenzene | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S006 | N | 8/18/2015 | 7 - 8 | SW8260B | VOC | 1,3-Dichloropropane | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S006 | N | 8/18/2015 | 7 - 8 | SW8260B | VOC | 1,4-Dichlorobenzene | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S006 | N | 8/18/2015 | 7 - 8 | SW8260B | VOC | 2,2-Dichloropropane | 2 U | 2 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S006 | N | 8/18/2015 | 7 - 8 | SW8260B | VOC | 2-Butanone (MEK) | 4.9 U | 4.9 | 20 | 20 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S006 | N | 8/18/2015 | 7 - 8 | SW8260B | VOC | 2-Chloro-1,1,1-trifluoroethane | 2 U | 2 | 9.8 | 10 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S006 | N | 8/18/2015 | 7 - 8 | SW8260B | VOC | 2-Chloroethyl vinyl ether | 2 U | 2 | 9.8 | 10 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S006 | N | 8/18/2015 | 7 - 8 | SW8260B | VOC | 2-Chlorotoluene | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S006 | N | 8/18/2015 | 7 - 8 | SW8260B | VOC | 2-Hexanone | 4.9 U | 4.9 | 9.8 | 10 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S006 | N | 8/18/2015 | 7 - 8 | SW8260B | VOC | 4-Chlorotoluene | 0.98 U | 0.98 | 9.8 | 10 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S006 | N | 8/18/2015 | 7 - 8 | SW8260B | VOC | 4-Methyl-2-pentanone (MIBK) | 4.9 U | 4.9 | 9.8 | 10 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S006 | N | 8/18/2015 | 7 - 8 | SW8260B | VOC | Acetone | 19 J | 4.9 | 20 | 20 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S006 | N | 8/18/2015 | 7 - 8 | SW8260B | VOC | Benzene | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S006 | N | 8/18/2015 | 7 - 8 | SW8260B | VOC | Bromobenzene | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S006 | N | 8/18/2015 | 7 - 8 | SW8260B | VOC | Bromochloromethane | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S006 | N | 8/18/2015 | 7 - 8 | SW8260B | VOC | Bromodichloromethane | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S006 | N | 8/18/2015 | 7 - 8 | SW8260B | VOC | Bromoform | 2 U | 2 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S006 | N | 8/18/2015 | 7 - 8 | SW8260B | VOC | Bromomethane | 2 U | 2 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S006 | N | 8/18/2015 | 7 - 8 | SW8260B | VOC | Carbon tetrachloride | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S006 | N | 8/18/2015 | 7 - 8 | SW8260B | VOC | Chlorobenzene | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S006 | N | 8/18/2015 | 7 - 8 | SW8260B | VOC | Chloroethane | 2 U | 2 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S006 | N | 8/18/2015 | 7 - 8 | SW8260B | VOC | Chloromethane | 2 U | 2 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S006 | N | 8/18/2015 | 7 - 8 | SW8260B | VOC | Chlorotrifluoroethylene | 2 U | 2 | 9.8 | 10 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S006 | N | 8/18/2015 | 7 - 8 | SW8260B | VOC | cis-1,2-Dichloroethene | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S006 | N | 8/18/2015 | 7 - 8 | SW8260B | VOC | cis-1,3-Dichloropropene | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S006 | N | 8/18/2015 | 7 - 8 | SW8260B | VOC | Dibromochloromethane | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S006 | N | 8/18/2015 | 7 - 8 | SW8260B | VOC | Dibromomethane | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S006 | N | 8/18/2015 | 7 - 8 | SW8260B | VOC | Dichlorodifluoromethane | 2 U | 2 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S006 | N | 8/18/2015 | 7 - 8 | SW8260B | VOC | Ethylbenzene | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S006 | N | 8/18/2015 | 7 - 8 | SW8260B | VOC | Hexachlorobutadiene | 2 U | 2 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S006 | N | 8/18/2015 | 7 - 8 | SW8260B | VOC | Isopropylbenzene | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S006 | N | 8/18/2015 | 7 - 8 | SW8260B | VOC | m,p-Xylenes | 2 U | 2 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S006 | N | 8/18/2015 | 7 - 8 | SW8260B | VOC | Methylene chloride | 2 U | 2 | 9.8 | 10 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S006 | N | 8/18/2015 | 7 - 8 | SW8260B | VOC | Methyl-tert-butyl Ether (MTBE) | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S006 | N | 8/18/2015 | 7 - 8 | SW8260B | VOC | n-butylbenzene | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |

APPENDIX G-1

**Analytical Data - August 2015 Post-ISCO Soil Sampling**

*Soil Treatability Studies Summary, SSFL, Ventura County, California*

| Matrix | Location | Sample ID | Type | Sample Date | Sample Depth (ft) | Method | Class | Analyte | Final Result | MDL | RL | FSP SL | Units | FSP Ex | Ex Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO | BVBS1299 | BVBS1299S006 | N | 8/18/2015 | 7 - 8 | SW8260B | VOC | n-Propylbenzene | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S006 | N | 8/18/2015 | 7 - 8 | SW8260B | VOC | o-Xylene | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S006 | N | 8/18/2015 | 7 - 8 | SW8260B | VOC | p-Isopropyltoluene | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S006 | N | 8/18/2015 | 7 - 8 | SW8260B | VOC | sec-Butylbenzene | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S006 | N | 8/18/2015 | 7 - 8 | SW8260B | VOC | Styrene | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S006 | N | 8/18/2015 | 7 - 8 | SW8260B | VOC | tert-Butylbenzene | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S006 | N | 8/18/2015 | 7 - 8 | SW8260B | VOC | Tetrachloroethene | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S006 | N | 8/18/2015 | 7 - 8 | SW8260B | VOC | Toluene | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S006 | N | 8/18/2015 | 7 - 8 | SW8260B | VOC | trans-1,2-Dichloroethene | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S006 | N | 8/18/2015 | 7 - 8 | SW8260B | VOC | trans-1,3-Dichloropropene | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S006 | N | 8/18/2015 | 7 - 8 | SW8260B | VOC | Trichloroethene | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S006 | N | 8/18/2015 | 7 - 8 | SW8260B | VOC | Trichlorofluoromethane | 2 U | 2 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S006 | N | 8/18/2015 | 7 - 8 | SW8260B | VOC | Trichloromethane (Chloroform) | 0.98 U | 0.98 | 4.9 | 5 | µg/kg | | N |
| SO | BVBS1299 | BVBS1299S006 | N | 8/18/2015 | 7 - 8 | SW8260B | VOC | Vinyl chloride | 2 U | 2 | 4.9 | 5 | µg/kg | | N |

**Notes:**

FD - field duplicate sample
FS - field split sample
N - normal sample
NC - no criteria
SO - subsurface soil sample
µg/kg - micrograms per kilogram

**Class Abbreviations:**

| | |
|---|---|
| GENCHEM | general chemistry |
| HC | hydrocarbons |
| PAH | polycyclic aromatic hydrocarbons |
| PHTH | phthalates |
| SVOC | semi-volatile organic compound |
| VOC | volatile organic compound |

**Validation Flags**

| | |
|---|---|
| J | Analyte is present but the reported quantitation is estimated. |
| U | Analyte not detected at specified detection limit. |
| UJ | Estimated detection limit. The result is estimated and may be a false negative due to related QC problems. |
| = | Reported quantitation represents the most accurate concentration for the given |

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APPENDIX G-2a

**TOTAL EFH (C8-C40) Concentration Change Evaluation (Pre- and Post-ISCO)**

| Sample Station | Sample Depth (ft) | Pre-ISCO Conc (mg/kg) | Post-ISCO Conc (mg/kg) | Conc Decrease (mg/kg) | Notes |
|---|---|---|---|---|---|
| BVBS1294 | 2 - 4 | 26 | 29 | -3 | |
| BVBS1294 | 6 - 7 | 6300 | 11000 | -4700 | |
| BVBS1295 | 2.5 - 4 | 150 | 7.4 | 142.6 | |
| BVBS1295 | 5.5 - 8 | 8.5 | 160 | -151.5 | |
| BVBS1297 | 4 - 5 | 5100 | 370 | 4730 | |
| BVBS1297 | 7 - 8 | 2.65 | 2.2 | 0.45 | exclude result* |
| BVBS1298 | 4 - 5 | 9700 | 13000 | -3300 | |
| BVBS1298 | 6 - 8 | 680 | 15 | 665 | |
| BVBS1299 | 4 - 5.5 | 3200 | 9000 | -5800 | |
| BVBS1299 | 7 - 8 | 2.65 | 4.7 | -2.05 | |
| | mean: | 2796.35 | 3731.78889 | -935.43889 | |
| | SD: | 3537.999 | 5543.32265 | 3193.80283 | |
| | n: | 9 | 9 | 9 | |
| | | **p-value for paired t-test:** | | **0.7974028** | |

**Data Sorted by Pre-ISCO Concentration**

| Sample Station | Sample Depth (ft) | Pre-ISCO Conc (mg/kg) | Post-ISCO Conc (mg/kg) | Conc Decrease (mg/kg) | Subgroup p-value |
|---|---|---|---|---|---|
| BVBS1298 | 4 - 5 | 9700 | 13000 | -3300 | |
| BVBS1294 | 6 - 7 | 6300 | 11000 | -4700 | |
| BVBS1297 | 4 - 5 | 5100 | 370 | 4730 | |
| BVBS1299 | 4 - 5.5 | 3200 | 9000 | -5800 | 0.7938067 |
| BVBS1298 | 6 - 8 | 680 | 15 | 665 | |
| BVBS1295 | 2.5 - 4 | 150 | 7.4 | 142.6 | |
| BVBS1294 | 2 - 4 | 26 | 29 | -3 | |
| BVBS1295 | 5.5 - 8 | 8.5 | 160 | -151.5 | |
| BVBS1299 | 7 - 8 | 2.65 | 4.7 | -2.05 | 0.2048497 |

High concentration and low concentration subgroups identified above.

concentration below the FSP SL of 10 mg/kg

Notes:

For each sample location, the analytical results for the soil samples collected on April 10, 2015 (following bioventing operations) were used to establish baseline conditions for ISCO treatment. These results were compared to those obtained from soil samples collected on August 18, 2015 (27 days after ISCO infiltration).

- Non-detect results evaluated as one-half the reporting limit.
- Where field duplicates were collected, the greater of the two concentrations was selected.
- If either the field duplicate or the normal sample concentration was non-detect, the measured concentration was selected.
- If both the pre-ISCO and post-ISCO concentrations were non-detect, the result was excluded from the evaluation (reflected as n-value <10 above).

The reported sample depth corresponds to the sample depth interval where the pre-ISCO concentration was measured. In some cases, the post-ISCO sample depth interval differed slightly from this interval.

Two-sample t-tests for the difference between means (data paired by sample location) are calculated above.

SD: standard deviation

n: number of results used in calculation

*Result excluded from evaluation if both the pre-ISCO and post-ISCO concentrations were non-detect (reflected above as n-value <10).

Given the apparent bimodal distribution in the pre-ISCO concentration data, separate t-tests also were performed for the high-concentration and low-concentration subgroups.

APPENDIX G-2b

**GRO (C4-C12) Concentration Change Evaluation (Pre- and Post-ISCO)**

| Sample Station | Sample Depth (ft) | Pre-ISCO Conc (mg/kg) | Post-ISCO Conc (mg/kg) | Conc Decrease (mg/kg) | Notes |
|---|---|---|---|---|---|
| BVBS1294 | 2 - 4 | 1 | 70 | -69 | |
| BVBS1294 | 6 - 7 | 2000 | 1900 | 100 | |
| BVBS1295 | 2.5 - 4 | 37 | 0.475 | 36.525 | |
| BVBS1295 | 5.5 - 8 | 7.9 | 14 | -6.1 | |
| BVBS1297 | 4 - 5 | 1100 | 1.5 | 1098.5 | |
| BVBS1297 | 7 - 8 | 0.475 | 0.55 | -0.075 | exclude result* |
| BVBS1298 | 4 - 5 | 1700 | 10 | 1690 | |
| BVBS1298 | 6 - 8 | 84 | 4.5 | 79.5 | |
| BVBS1299 | 4 - 5.5 | 0.485 | 560 | -559.515 | |
| BVBS1299 | 7 - 8 | 390 | 0.5 | 389.5 | |
| | mean: | 591.153889 | 284.552778 | 306.601111 | |
| | SD: | 799.642292 | 632.464073 | 680.439555 | |
| | n: | 9 | 9 | 9 | |
| | | **p-value for paired t-test:** | | **0.10671059** | |

**Data Sorted by Pre-ISCO Concentration**

| % decr | Sample Station | Sample Depth (ft) | Pre-ISCO Conc (mg/kg) | Post-ISCO Conc (mg/kg) | Conc Decrease (mg/kg) | Subgroup p-value |
|---|---|---|---|---|---|---|
| 5% | BVBS1294 | 6 - 7 | 2000 | 1900 | 100 | |
| 99% | BVBS1298 | 4 - 5 | 1700 | 10 | 1690 | |
| 100% | BVBS1297 | 4 - 5 | 1100 | 1.5 | 1098.5 | |
| 100% | BVBS1299 | 7 - 8 | 390 | 0.5 | 389.5 | 0.05302983 |
| 95% | BVBS1298 | 6 - 8 | 84 | 4.5 | 79.5 | |
| 99% | BVBS1295 | 2.5 - 4 | 37 | 0.475 | 36.525 | |
| -77% | BVBS1295 | 5.5 - 8 | 7.9 | 14 | -6.1 | |
| -6900% | BVBS1294 | 2 - 4 | 1 | 70 | -69 | |
| -115364% | BVBS1299 | 4 - 5.5 | 0.485 | 560 | -559.515 | 0.78808033 |

High concentration and low concentration subgroups identified above.

concentration below the FSP SL of 1 mg/kg

Notes:

For each sample location, the analytical results for the soil samples collected on April 10, 2015 (following bioventing operations) were used to establish baseline conditions for ISCO treatment. These results were compared to those obtained from soil samples collected on August 18, 2015 (27 days after ISCO infiltration).

- Non-detect results evaluated as one-half the reporting limit.
- Where field duplicates were collected, the greater of the two concentrations was selected.
- If either the field duplicate or the normal sample concentration was non-detect, the measured concentration was selected.
- If both the pre-ISCO and post-ISCO concentrations were non-detect, the result was excluded from the evaluation (reflected as n-value <10 above).

The reported sample depth corresponds to the sample depth interval where the pre-ISCO concentration was measured. In some cases, the post-ISCO sample depth interval differed slightly from this interval.

Two-sample t-tests for the difference between means (data paired by sample location) are calculated above.

SD: standard deviation

n: number of results used in calculation

Given the apparent bimodal distribution in the pre-ISCO concentration data, separate t-tests also were performed for the high-concentration and low-concentration subgroups.

APPENDIX G-2c

**PAHTEQM Concentration Change Evaluation (Pre- and Post-ISCO)**

| Sample Station | Sample Depth (ft) | Pre-ISCO Conc (µg/kg) | Post-ISCO Conc (µg/kg) | Conc Decrease (µg/kg) | Notes |
|---|---|---|---|---|---|
| BVBS1294 | 2 - 4 | 0 | 7.7 | -7.7 | |
| BVBS1294 | 6 - 7 | 0 | 75.41 | -75.41 | |
| BVBS1295 | 2.5 - 4 | 13.442 | 0.95 | 12.492 | |
| BVBS1295 | 5.5 - 8 | 0 | 0 | 0 | exclude result* |
| BVBS1297 | 4 - 5 | 65.24 | 0 | 65.24 | |
| BVBS1297 | 7 - 8 | 0 | 0 | 0 | exclude result* |
| BVBS1298 | 4 - 5 | 79.6 | 96.69 | -17.09 | |
| BVBS1298 | 6 - 8 | 0 | 0 | 0 | exclude result* |
| BVBS1299 | 4 - 5.5 | 0 | 65.42 | -65.42 | |
| BVBS1299 | 7 - 8 | 18.82 | 0 | 18.82 | |
| | mean: | 25.3002857 | 35.1671429 | -9.8668571 | |
| | SD: | 33.2830441 | 42.2660178 | 48.9945891 | |
| | n: | 7 | 7 | 7 | |
| | | **p-value for paired t-test:** | | **0.69334715** | |

**Data Sorted by Pre-ISCO Concentration**

| % decr | Sample Station | Sample Depth (ft) | Pre-ISCO Conc (µg/kg) | Post-ISCO Conc (µg/kg) | Conc Decrease (µg/kg) |
|---|---|---|---|---|---|
| -21% | BVBS1298 | 4 - 5 | 79.6 | 96.69 | -17.09 |
| 100% | BVBS1297 | 4 - 5 | 65.24 | 0 | 65.24 |
| 100% | BVBS1299 | 7 - 8 | 18.82 | 0 | 18.82 |
| 93% | BVBS1295 | 2.5 - 4 | 13.442 | 0.95 | 12.492 |
| - | BVBS1294 | 2 - 4 | 0 | 7.7 | -7.7 |
| - | BVBS1294 | 6 - 7 | 0 | 75.41 | -75.41 |
| - | BVBS1299 | 4 - 5.5 | 0 | 65.42 | -65.42 |

No subgroups identified

concentration below the FSP SL of 4.47 µg/kg

Notes:

For each sample location, the analytical results for the soil samples collected on April 10, 2015 (following bioventing operations) were used to establish baseline conditions for ISCO treatment. These results were compared to those obtained from soil samples collected on August 18, 2015 (27 days after ISCO infiltration).

- Given the nature of PAHTEQM results where non-detects are reported as 0, no adjustment was made for non-detect results
- Where field duplicates were collected, the greater of the two concentrations was selected.
- If both the pre-ISCO and post-ISCO concentrations were non-detect, the result was excluded from the evaluation (reflected as n-value <10 above).

The reported sample depth corresponds to the sample depth interval where the pre-ISCO concentration was measured. In some cases, the post-ISCO sample depth interval differed slightly from this interval.

Two-sample t-tests for the difference between means (data paired by sample location) are calculated above.

SD: standard deviation

n: number of results used in calculation

*Result excluded from evaluation if both the pre-ISCO and post-ISCO concentrations were non-detect (reflected above as n-value <10).

*include above portion of this spreadsheet*

APPENDIX G-2d

**Bis(2-ethylhexyl)phthalate Concentration Change Evaluation (Pre- and Post-ISCO)**

| Sample Station | Sample Depth (ft) | Pre-ISCO Conc (µg/kg) | Post-ISCO Conc (µg/kg) | Conc Decrease (µg/kg) | Notes |
|---|---|---|---|---|---|
| BVBS1294 | 2 - 4 | 18 | 130 | -112 | |
| BVBS1294 | 6 - 7 | 12.5 | 1300 | -1287.5 | |
| BVBS1295 | 2.5 - 4 | 450 | 21 | 429 | |
| BVBS1295 | 5.5 - 8 | 10.5 | 78 | -67.5 | |
| BVBS1297 | 4 - 5 | 1200 | 10.5 | 1189.5 | |
| BVBS1297 | 7 - 8 | 10.5 | 11.5 | -1 | exclude result* |
| BVBS1298 | 4 - 5 | 1300 | 1900 | -600 | |
| BVBS1298 | 6 - 8 | 76 | 48 | 28 | |
| BVBS1299 | 4 - 5.5 | 540 | 1700 | -1160 | |
| BVBS1299 | 7 - 8 | 10.5 | 10.5 | 0 | exclude result* |
| | mean: | 450.875 | 648.4375 | -197.5625 | |
| | SD: | 535.078148 | 832.557996 | 816.599589 | |
| | n: | 8 | 8 | 8 | |
| | | **p-value for paired t-test:** | | **0.74210012** | |

**Data Sorted by Pre-ISCO Concentration**

| % decr | Sample Station | Sample Depth (ft) | Pre-ISCO Conc (µg/kg) | Post-ISCO Conc (µg/kg) | Conc Decrease (µg/kg) |
|---|---|---|---|---|---|
| -46% | BVBS1298 | 4 - 5 | 1300 | 1900 | -600 |
| 99% | BVBS1297 | 4 - 5 | 1200 | 10.5 | 1189.5 |
| -215% | BVBS1299 | 4 - 5.5 | 540 | 1700 | -1160 |
| 95% | BVBS1295 | 2.5 - 4 | 450 | 21 | 429 |
| 37% | BVBS1298 | 6 - 8 | 76 | 48 | 28 |
| -622% | BVBS1294 | 2 - 4 | 18 | 130 | -112 |
| -10300% | BVBS1294 | 6 - 7 | 12.5 | 1300 | -1287.5 |
| -643% | BVBS1295 | 5.5 - 8 | 10.5 | 78 | -67.5 |

No subgroups identified

concentration below the FSP SL of 61 µg/kg

Notes:

For each sample location, the analytical results for the soil samples collected on April 10, 2015 (following bioventing operations) were used to establish baseline conditions for ISCO treatment. These results were compared to those obtained from soil samples collected on August 18, 2015 (27 days after ISCO infiltration).

- Non-detect results evaluated as one-half the reporting limit.
- Where field duplicates were collected, the greater of the two concentrations was selected.
- If either the field duplicate or the normal sample concentration was non-detect, the measured concentration was selected.
- If both the pre-ISCO and post-ISCO concentrations were non-detect, the result was excluded from the evaluation (reflected as n-value <10 above).

The reported sample depth corresponds to the sample depth interval where the pre-ISCO concentration was measured. In some cases, the post-ISCO sample depth interval differed slightly from this interval.

Two-sample t-tests for the difference between means (data paired by sample location) are calculated above.

SD: standard deviation

n: number of results used in calculation

APPENDIX G-2e

**n-Propylbenzene Concentration Change Evaluation (Pre- and Post-ISCO)**

| Sample Station | Sample Depth (ft) | Pre-ISCO Conc (µg/kg) | Post-ISCO Conc (µg/kg) | Conc Decrease (µg/kg) | Notes |
|---|---|---|---|---|---|
| BVBS1294 | 2 - 4 | 0.55 | 0.55 | 0 | exclude result* |
| BVBS1294 | 6 - 7 | 19 | 20 | -1 | |
| BVBS1295 | 2.5 - 4 | 0.465 | 0.475 | -0.01 | exclude result* |
| BVBS1295 | 5.5 - 8 | 0.475 | 0.485 | -0.01 | exclude result* |
| BVBS1297 | 4 - 5 | 0.5 | 0.49 | 0.01 | exclude result* |
| BVBS1297 | 7 - 8 | 0.465 | 0.55 | -0.085 | exclude result* |
| BVBS1298 | 4 - 5 | 9.3 | 16 | -6.7 | |
| BVBS1298 | 6 - 8 | 1 | 0.465 | 0.535 | |
| BVBS1299 | 4 - 5.5 | 1.4 | 0.6 | 0.8 | |
| BVBS1299 | 7 - 8 | 0.485 | 0.49 | -0.005 | exclude result* |
| | mean: | 7.675 | 9.26625 | -1.59125 | |
| | SD: | 8.46221996 | 10.2163703 | 3.4970425 | |
| | n: | 4 | 4 | 4 | |
| | | **p-value for paired t-test:** | | **0.78505491** | |

**Data Sorted by Pre-ISCO Concentration**

| Sample Station | Sample Depth (ft) | Pre-ISCO Conc (µg/kg) | Post-ISCO Conc (µg/kg) | Conc Decrease (µg/kg) |
|---|---|---|---|---|
| BVBS1294 | 6 - 7 | 19 | 20 | -1 |
| BVBS1298 | 4 - 5 | 9.3 | 16 | -6.7 |
| BVBS1299 | 4 - 5.5 | 1.4 | 0.6 | 0.8 |
| BVBS1298 | 6 - 8 | 1 | 0.465 | 0.535 |

No subgroups identified

concentration below the FSP SL of 5 µg/kg

Notes:

For each sample location, the analytical results for the soil samples collected on April 10, 2015 (following bioventing operations) were used to establish baseline conditions for ISCO treatment. These results were compared to those obtained from soil samples collected on August 18, 2015 (27 days after ISCO infiltration).

- Non-detect results evaluated as one-half the reporting limit.
- Where field duplicates were collected, the greater of the two concentrations was selected.
- If either the field duplicate or the normal sample concentration was non-detect, the measured concentration was selected.
- If both the pre-ISCO and post-ISCO concentrations were non-detect, the result was excluded from the evaluation (reflected as n-value <10 above).

The reported sample depth corresponds to the sample depth interval where the pre-ISCO concentration was measured. In some cases, the post-ISCO sample depth interval differed slightly from this interval.

Two-sample t-tests for the difference between means (data paired by sample location) are calculated above.

SD: standard deviation

n: number of results used in calculation

APPENDIX G-2f

**sec-Butylbenzene Concentration Change Evaluation (Pre- and Post-ISCO)**

| Sample Station | Sample Depth (ft) | Pre-ISCO Conc (µg/kg) | Post-ISCO Conc (µg/kg) | Conc Decrease (µg/kg) | Notes |
|---|---|---|---|---|---|
| BVBS1294 | 2 - 4 | 0.55 | 0.55 | 0 | exclude result* |
| BVBS1294 | 6 - 7 | 23 | 21 | 2 | |
| BVBS1295 | 2.5 - 4 | 0.465 | 0.475 | -0.01 | exclude result* |
| BVBS1295 | 5.5 - 8 | 0.475 | 0.485 | -0.01 | exclude result* |
| BVBS1297 | 4 - 5 | 1.9 | 0.49 | 1.41 | |
| BVBS1297 | 7 - 8 | 0.465 | 0.55 | -0.085 | exclude result* |
| BVBS1298 | 4 - 5 | 15 | 26 | -11 | |
| BVBS1298 | 6 - 8 | 2 | 0.465 | 1.535 | |
| BVBS1299 | 4 - 5.5 | 7 | 14 | -7 | |
| BVBS1299 | 7 - 8 | 0.485 | 0.49 | -0.005 | exclude result* |
| | mean: | 9.78 | 12.391 | -2.611 | |
| | SD: | 9.11548134 | 11.680881 | 6.00536677 | |
| | n: | 5 | 5 | 5 | |
| | | **p-value for paired t-test:** | | **0.80699703** | |

**Data Sorted by Pre-ISCO Concentration**

| Sample Station | Sample Depth (ft) | Pre-ISCO Conc (µg/kg) | Post-ISCO Conc (µg/kg) | Conc Decrease (µg/kg) |
|---|---|---|---|---|
| BVBS1294 | 6 - 7 | 23 | 21 | 2 |
| BVBS1298 | 4 - 5 | 15 | 26 | -11 |
| BVBS1299 | 4 - 5.5 | 7 | 14 | -7 |
| BVBS1298 | 6 - 8 | 2 | 0.465 | 1.535 |
| BVBS1297 | 4 - 5 | 1.9 | 0.49 | 1.41 |

No subgroups identified

concentration below the FSP SL of 5 µg/kg

Notes:

For each sample location, the analytical results for the soil samples collected on April 10, 2015 (following bioventing operations) were used to establish baseline conditions for ISCO treatment. These results were compared to those obtained from soil samples collected on August 18, 2015 (27 days after ISCO infiltration).

- Non-detect results evaluated as one-half the reporting limit.
- Where field duplicates were collected, the greater of the two concentrations was selected.
- If either the field duplicate or the normal sample concentration was non-detect, the measured concentration was selected.
- If both the pre-ISCO and post-ISCO concentrations were non-detect, the result was excluded from the evaluation (reflected as n-value <10 above).

The reported sample depth corresponds to the sample depth interval where the pre-ISCO concentration was measured. In some cases, the post-ISCO sample depth interval differed slightly from this interval.

Two-sample t-tests for the difference between means (data paired by sample location) are calculated above.

SD: standard deviation

n: number of results used in calculation

# Appendix H
# Combined Bioventing and ISCO Data

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APPENDIX Ha

**TOTAL EFH (C8-C40) Concentration Change Evaluation**

| Sample Station | Sample Depth (ft) | Starting Conc (mg/kg) | Post-ISCO Conc (mg/kg) | Conc Decrease (mg/kg) | Notes |
|---|---|---|---|---|---|
| BVBS1294 | 2 - 4 | 88 | 29 | 59 | |
| BVBS1294 | 6 - 7 | 11000 | 11000 | 0 | |
| BVBS1295 | 2.5 - 4 | 16 | 7.4 | 8.6 | |
| BVBS1295 | 5.5 - 7 | 15000 | 160 | 14840 | |
| BVBS1297 | 4 - 5 | 7900 | 370 | 7530 | |
| BVBS1297 | 7 - 8 | 3.1 | 2.2 | 0.9 | |
| BVBS1298 | 4 - 5 | 18000 | 13000 | 5000 | |
| BVBS1298 | 7 - 8 | 84 | 15 | 69 | |
| BVBS1299 | 4 - 5.5 | 7700 | 9000 | -1300 | |
| BVBS1299 | 7 - 8 | 27 | 4.7 | 22.3 | |
| | mean: | 5981.81 | 3358.83 | 2622.98 | |
| | SD: | 6943.38443 | 5357.71778 | 5108.00106 | |
| | n: | 10 | 10 | 10 | |
| | | **p-value for paired t-test:** | | **0.06942832** | |

**Data Sorted by Starting Concentration**

| Sample Station | Sample Depth (ft) | Starting Conc (mg/kg) | Post-ISCO Conc (mg/kg) | Conc Decrease (mg/kg) | Subgroup p-value |
|---|---|---|---|---|---|
| BVBS1298 | 4 - 5 | 18000 | 13000 | 5000 | |
| BVBS1295 | 5.5 - 7 | 15000 | 160 | 14840 | |
| BVBS1294 | 6 - 7 | 11000 | 11000 | 0 | |
| BVBS1297 | 4 - 5 | 7900 | 370 | 7530 | |
| BVBS1299 | 4 - 5.5 | 7700 | 9000 | -1300 | 0.07306167 |
| BVBS1294 | 2 - 4 | 88 | 29 | 59 | |
| BVBS1298 | 7 - 8 | 84 | 15 | 69 | |
| BVBS1299 | 7 - 8 | 27 | 4.7 | 22.3 | |
| BVBS1295 | 2.5 - 4 | 16 | 7.4 | 8.6 | |
| BVBS1297 | 7 - 8 | 3.1 | 2.2 | 0.9 | 0.0393619 |

High concentration and low concentration subgroups identified above.

concentration below the FSP SL of 10 mg/kg

Notes:

For each sample location, the starting concentration was selected as the greater of the Feb 4 sample result (before bioventing) or the Mar 3 sample result (midpoint of bioventing). The Aug 18 sample result was used for the post-ISCO concentration.

- Non-detect results evaluated as one-half the reporting limit.
- Where field duplicates were collected, the greater of the two concentrations was selected.
- If either the field duplicate or the normal sample concentration was non-detect, the measured concentration was selected.
- If both the starting and post-ISCO concentrations were non-detect, the result was excluded from the evaluation (reflected as n-value <10 above).

The reported sample depth corresponds to the sample depth interval where the starting concentration was measured. In some cases, the post-ISCO sample depth interval differed slightly from this interval (Table 1).

Two-sample t-tests for the difference between means (data paired by sample location) are calculated above.

SD: standard deviation

n: number of results used in calculation

Given the apparent bimodal distribution in the starting concentration data, separate t-tests also were performed for the high-concentration and low-concentration subgroups.

APPENDIX Hb

**GRO (C4-C12) Concentration Change Evaluation**

| Sample Station | Sample Depth (ft) | Starting Conc (mg/kg) | Post-ISCO Conc (mg/kg) | Conc Decrease (mg/kg) | Notes |
|---|---|---|---|---|---|
| BVBS1294 | 2 - 4 | 9.4 | 70 | -60.6 | |
| BVBS1294 | 6 - 7 | 2000 | 1900 | 100 | |
| BVBS1295 | 2.5 - 4 | 0.6 | 0.475 | 0.125 | exclude result* |
| BVBS1295 | 5.5 - 7 | 1100 | 14 | 1086 | |
| BVBS1297 | 4 - 5 | 1300 | 1.5 | 1298.5 | |
| BVBS1297 | 7 - 8 | 0.66 | 0.55 | 0.11 | exclude result* |
| BVBS1298 | 4 - 5 | 2000 | 10 | 1990 | |
| BVBS1298 | 7 - 8 | 12 | 4.5 | 7.5 | |
| BVBS1299 | 7 - 8 | 11 | 560 | -549 | |
| BVBS1299 | 4 - 5.5 | 680 | 0.5 | 679.5 | |
| | mean: | 889.05 | 320.0625 | 568.9875 | |
| | SD: | 848.48387 | 666.472453 | 846.207836 | |
| | n: | 8 | 8 | 8 | |
| | | **p-value for paired t-test:** | | **0.04947002** | |

**Data Sorted by Starting Concentration**

| Sample Station | Sample Depth (ft) | Starting Conc (mg/kg) | Post-ISCO Conc (mg/kg) | Conc Decrease (mg/kg) | Subgroup p-value |
|---|---|---|---|---|---|
| BVBS1294 | 6 - 7 | 2000 | 1900 | 100 | |
| BVBS1298 | 4 - 5 | 2000 | 10 | 1990 | |
| BVBS1297 | 4 - 5 | 1300 | 1.5 | 1298.5 | |
| BVBS1295 | 5.5 - 7 | 1100 | 14 | 1086 | |
| BVBS1299 | 4 - 5.5 | 680 | 0.5 | 679.5 | 0.015361 |
| BVBS1298 | 7 - 8 | 12 | 4.5 | 7.5 | |
| BVBS1299 | 7 - 8 | 11 | 560 | -549 | |
| BVBS1294 | 2 - 4 | 9.4 | 70 | -60.6 | 0.81465586 |

High concentration and low concentration subgroups identified above.

concentration below the FSP SL of 1 mg/kg

Notes:

For each sample location, the starting concentration was selected as the greater of the Feb 4 sample result (before bioventing) or the Mar 3 sample result (midpoint of bioventing). The Aug 18 sample result was used for the post-ISCO concentration.

- Non-detect results evaluated as one-half the reporting limit.
- Where field duplicates were collected, the greater of the two concentrations was selected.
- If either the field duplicate or the normal sample concentration was non-detect, the measured concentration was selected.
- If both the starting and post-ISCO concentrations were non-detect, the result was excluded from the evaluation (reflected as n-value <10 above).

The reported sample depth corresponds to the sample depth interval where the starting concentration was measured. In some cases, the post-ISCO sample depth interval differed slightly from this interval (Table 1).

Two-sample t-tests for the difference between means (data paired by sample location) are calculated above.

SD: standard deviation

n: number of results used in calculation

Given the apparent bimodal distribution in the starting concentration data, separate t-tests also were performed for the high-concentration and low-concentration subgroups.

APPENDIX Hc

**PAHTEQ Concentration Change Evaluation**

| Sample Station | Sample Depth (ft) | Starting Conc (µg/kg) | Post-ISCO Conc (µg/kg) | Conc Decrease (µg/kg) | Notes |
|---|---|---|---|---|---|
| BVBS1294 | 2 - 4 | 14.694 | 7.7 | 6.994 | |
| BVBS1294 | 6 - 7 | 96.88 | 75.41 | 21.47 | |
| BVBS1295 | 2.5 - 4 | 0 | 0.95 | -0.95 | |
| BVBS1295 | 5.5 - 8 | 10.7 | 0 | 10.7 | |
| BVBS1297 | 4 - 5 | 77.09 | 0 | 77.09 | |
| BVBS1297 | 7 - 8 | 0 | 0 | 0 | exclude result* |
| BVBS1298 | 4 - 5 | 129.67 | 96.69 | 32.98 | |
| BVBS1298 | 7 - 8 | 0 | 0 | 0 | exclude result* |
| BVBS1299 | 7 - 8 | 0 | 65.42 | -65.42 | |
| BVBS1299 | 4 - 5.5 | 30.38 | 0 | 30.38 | |
| | mean: | 44.92675 | 30.77125 | 14.1555 | |
| | SD: | 49.640071 | 41.0585549 | 40.0990083 | |
| | n: | 8 | 8 | 8 | |
| | | **p-value for paired t-test:** | | **0.17565307** | |

**Data Sorted by Starting Concentration**

| Sample Station | Sample Depth (ft) | Starting Conc (µg/kg) | Post-ISCO Conc (µg/kg) | Conc Decrease (µg/kg) |
|---|---|---|---|---|
| BVBS1298 | 4 - 5 | 129.67 | 96.69 | 32.98 |
| BVBS1294 | 6 - 7 | 96.88 | 75.41 | 21.47 |
| BVBS1297 | 4 - 5 | 77.09 | 0 | 77.09 |
| BVBS1299 | 4 - 5.5 | 30.38 | 0 | 30.38 |
| BVBS1294 | 2 - 4 | 14.694 | 7.7 | 6.994 |
| BVBS1295 | 5.5 - 8 | 10.7 | 0 | 10.7 |
| BVBS1295 | 2.5 - 4 | 0 | 0.95 | -0.95 |
| BVBS1299 | 7 - 8 | 0 | 65.42 | -65.42 |

No subgroups identified

concentration below the FSP SL of 4.47 µg/kg

Notes:

For each sample location, the starting concentration was selected as the greater of the Feb 4 sample result (before bioventing) or the Mar 3 sample result (midpoint of bioventing). The Aug 18 sample result was used for the post-ISCO concentration.

- Given the nature of PAHTEQ results where non-detects are reported as 0, no adjustment was made for non-detect results
- Where field duplicates were collected, the greater of the two concentrations was selected.
- If both the starting and post-ISCO concentrations were non-detect, the result was excluded from the evaluation (reflected as n-value <10 above).

The reported sample depth corresponds to the sample depth interval where the starting concentration was measured. In some cases, the post-ISCO sample depth interval differed slightly from this interval (Table 1).

Two-sample t-tests for the difference between means (data paired by sample location) are calculated above.

SD: standard deviation

n: number of results used in calculation

*Result excluded from evaluation if both starting and post-bioventing concentrations were non-detect (reflected above as n-value <14).

APPENDIX Hd

**Bis(2-ethylhexyl)phthalate Concentration Change Evaluation**

| Sample Station | Sample Depth (ft) | Starting Conc (µg/kg) | Post-ISCO Conc (µg/kg) | Conc Decrease (µg/kg) | Notes |
|---|---|---|---|---|---|
| BVBS1294 | 2 - 4 | 380 | 130 | 250 | |
| BVBS1294 | 6 - 7 | 1800 | 1300 | 500 | |
| BVBS1295 | 2.5 - 4.5 | 10 | 21 | -11 | |
| BVBS1295 | 5.5 - 8 | 820 | 78 | 742 | |
| BVBS1297 | 4 - 5 | 1100 | 10.5 | 1089.5 | |
| BVBS1297 | 7 - 8 | 10.5 | 11.5 | -1 | exclude result* |
| BVBS1298 | 4 - 5 | 2900 | 1900 | 1000 | |
| BVBS1298 | 7 - 8 | 48 | 48 | 0 | |
| BVBS1299 | 4 - 5.5 | 770 | 1700 | -930 | |
| BVBS1299 | 7 - 8 | 11 | 10.5 | 0.5 | exclude result* |
| | mean: | 978.5 | 648.4375 | 330.0625 | |
| | SD: | 971.920485 | 832.557996 | 659.389893 | |
| | n: | 8 | 8 | 8 | |
| | | **p-value for paired t-test:** | | **0.09987813** | |

**Data Sorted by Starting Concentration**

| Sample Station | Sample Depth (ft) | Starting Conc (µg/kg) | Post-ISCO Conc (µg/kg) | Conc Decrease (µg/kg) |
|---|---|---|---|---|
| BVBS1294 | 2 - 4 | 380 | 130 | 250 |
| BVBS1294 | 6 - 7 | 1800 | 1300 | 500 |
| BVBS1295 | 2.5 - 4.5 | 10 | 21 | -11 |
| BVBS1295 | 5.5 - 8 | 820 | 78 | 742 |
| BVBS1297 | 4 - 5 | 1100 | 10.5 | 1089.5 |
| BVBS1298 | 4 - 5 | 2900 | 1900 | 1000 |
| BVBS1298 | 7 - 8 | 48 | 48 | 0 |
| BVBS1299 | 4 - 5.5 | 770 | 1700 | -930 |

No subgroups identified

concentration below the FSP SL of 61 µg/kg

Notes:

For each sample location, the starting concentration was selected as the greater of the Feb 4 sample result (before bioventing) or the Mar 3 sample result (midpoint of bioventing). The Aug 18 sample result was used for the post-ISCO concentration.

- Non-detect results evaluated as one-half the reporting limit.
- Where field duplicates were collected, the greater of the two concentrations was selected.
- If either the field duplicate or the normal sample concentration was non-detect, the measured concentration was selected.
- If both the starting and post-ISCO concentrations were non-detect, the result was excluded from the evaluation (reflected as n-value <10 above).

The reported sample depth corresponds to the sample depth interval where the starting concentration was measured. In some cases, the post-ISCO sample depth interval differed slightly from this interval (Table 1).

Two-sample t-tests for the difference between means (data paired by sample location) are calculated above.

SD: standard deviation

n: number of results used in calculation

*Result excluded from evaluation if both starting and post-bioventing concentrations were non-detect (reflected above as n-value <14).

APPENDIX He

**n-Propylbenzene Concentration Change Evaluation**

| Sample Station | Sample Depth (ft) | Starting Conc (µg/kg) | Post-ISCO Conc (µg/kg) | Conc Decrease (µg/kg) | Notes |
|---|---|---|---|---|---|
| BVBS1294 | 2 - 4 | 0.55 | 0.55 | 0 | exclude result* |
| BVBS1294 | 6 - 7 | 17 | 20 | -3 | |
| BVBS1295 | 2.5 - 4 | 0.55 | 0.475 | 0.075 | exclude result* |
| BVBS1295 | 5.5 - 7 | 8 | 0.485 | 7.515 | |
| BVBS1297 | 4 - 5 | 4.1 | 0.49 | 3.61 | |
| BVBS1297 | 7 - 8 | 0.465 | 0.55 | -0.085 | exclude result* |
| BVBS1298 | 4 - 5 | 34 | 16 | 18 | |
| BVBS1298 | 7 - 8 | 0.49 | 0.465 | 0.025 | exclude result* |
| BVBS1299 | 4 - 5.5 | 6.4 | 0.6 | 5.8 | |
| BVBS1299 | 7 - 8 | 0.475 | 0.49 | -0.015 | exclude result* |
| | mean: | 13.9 | 7.515 | 6.385 | |
| | SD: | 12.254795 | 9.67547415 | 7.6207972 | |
| | n: | 5 | 5 | 5 | |
| | | **p-value for paired t-test:** | | **0.06714597** | |

**Data Sorted by Starting Concentration**

| Sample Station | Sample Depth (ft) | Starting Conc (µg/kg) | Post-ISCO Conc (µg/kg) | Conc Decrease (µg/kg) |
|---|---|---|---|---|
| BVBS1298 | 4 - 5 | 34 | 16 | 18 |
| BVBS1294 | 6 - 7 | 17 | 20 | -3 |
| BVBS1295 | 5.5 - 7 | 8 | 0.485 | 7.515 |
| BVBS1299 | 4 - 5.5 | 6.4 | 0.6 | 5.8 |
| BVBS1297 | 4 - 5 | 4.1 | 0.49 | 3.61 |

No subgroups identified

concentration below the FSP SL of 5 µg/kg

Notes:

For each sample location, the starting concentration was selected as the greater of the Feb 4 sample result (before bioventing) or the Mar 3 sample result (midpoint of bioventing). The Aug 18 sample result was used for the post-ISCO concentration.

- Non-detect results evaluated as one-half the reporting limit.
- Where field duplicates were collected, the greater of the two concentrations was selected.
- If either the field duplicate or the normal sample concentration was non-detect, the measured concentration was selected.
- If both the starting and post-ISCO concentrations were non-detect, the result was excluded from the evaluation (reflected as n-value <10 above).

The reported sample depth corresponds to the sample depth interval where the starting concentration was measured. In some cases, the post-ISCO sample depth interval differed slightly from this interval (Table 1).

Two-sample t-tests for the difference between means (data paired by sample location) are calculated above.

SD: standard deviation

n: number of results used in calculation

APPENDIX Hf

**sec-Butylbenzene Concentration Change Evaluation**

| Sample Station | Sample Depth (ft) | Starting Conc (µg/kg) | Post-ISCO Conc (µg/kg) | Conc Decrease (µg/kg) | Notes |
|---|---|---|---|---|---|
| BVBS1294 | 2 - 4 | 0.55 | 0.55 | 0 | exclude result* |
| BVBS1294 | 6 - 7 | 23 | 21 | 2 | |
| BVBS1295 | 2.5 - 4.5 | 0.55 | 0.475 | 0.075 | exclude result* |
| BVBS1295 | 5.5 - 7 | 17 | 0.485 | 16.515 | |
| BVBS1297 | 4 - 5 | 9 | 0.49 | 8.51 | |
| BVBS1297 | 7 - 8 | 0.465 | 0.55 | -0.085 | exclude result* |
| BVBS1298 | 4 - 5 | 35 | 26 | 9 | |
| BVBS1298 | 7 - 8 | 1.1 | 0.465 | 0.635 | |
| BVBS1299 | 4 - 5.5 | 24 | 14 | 10 | |
| BVBS1299 | 7 - 8 | 0.475 | 0.49 | -0.015 | exclude result* |
| | mean: | 18.1833333 | 10.4066667 | 7.77666667 | |
| | SD: | 11.9783833 | 11.5230142 | 5.79153319 | |
| | n: | 6 | 6 | 6 | |
| | | **p-value for paired t-test:** | | **0.01086768** | |

**Data Sorted by Starting Concentration**

| Sample Station | Sample Depth (ft) | Starting Conc (µg/kg) | Post-ISCO Conc (µg/kg) | Conc Decrease (µg/kg) |
|---|---|---|---|---|
| BVBS1298 | 4 - 5 | 35 | 26 | 9 |
| BVBS1299 | 4 - 5.5 | 24 | 14 | 10 |
| BVBS1294 | 6 - 7 | 23 | 21 | 2 |
| BVBS1295 | 5.5 - 7 | 17 | 0.485 | 16.515 |
| BVBS1297 | 4 - 5 | 9 | 0.49 | 8.51 |
| BVBS1298 | 7 - 8 | 1.1 | 0.465 | 0.635 |

No subgroups identified

concentration below the FSP SL of 5 µg/kg

Notes:

For each sample location, the starting concentration was selected as the greater of the Feb 4 sample result (before bioventing) or the Mar 3 sample result (midpoint of bioventing). The Aug 18 sample result was used for the post-ISCO concentration.

- Non-detect results evaluated as one-half the reporting limit.
- Where field duplicates were collected, the greater of the two concentrations was selected.
- If either the field duplicate or the normal sample concentration was non-detect, the measured concentration was selected.
- If both the starting and post-ISCO concentrations were non-detect, the result was excluded from the evaluation (reflected as n-value <10 above).

The reported sample depth corresponds to the sample depth interval where the starting concentration was measured. In some cases, the post-ISCO sample depth interval differed slightly from this interval (Table 1).

Two-sample t-tests for the difference between means (data paired by sample location) are calculated above.

SD: standard deviation

n: number of results used in calculation